Supervisory Management

AUGUST 1958

TRAINING: IT'S ON-THE-JOB RESULTS THAT COUNT

How to get trainees to apply the skills they've learned.

WHY SOME SUPERVISORS HAVE SPLIT PERSONALITIES

Leader at work, or skilled worker . . . which is the supervisor's job?

THE SUPERVISOR AND QUALITY CONTROL

Today's tough standards demand teamwork between foreman and engineer.

Words to Live By

The Science of Guesswork

By Thomas Henry Huxley

A MAN MAY SAY that the moon is made of green cheese; that is an hypothesis. But another man, who has devoted a great deal of time and attention to the subject, and availed himself of the most powerful telescopes and the observations of others, declares that in his opinion it is probably composed of materials very similar to those of the earth: and this is also only an hypothesis. But there is an enormous difference in the value of the two hypotheses. That based on sound scientific knowledge is sure to have great value; the hasty random guess is likely to have little value. The result depends on the patience and faithfulness with which the investigator applies every possible kind of verification.

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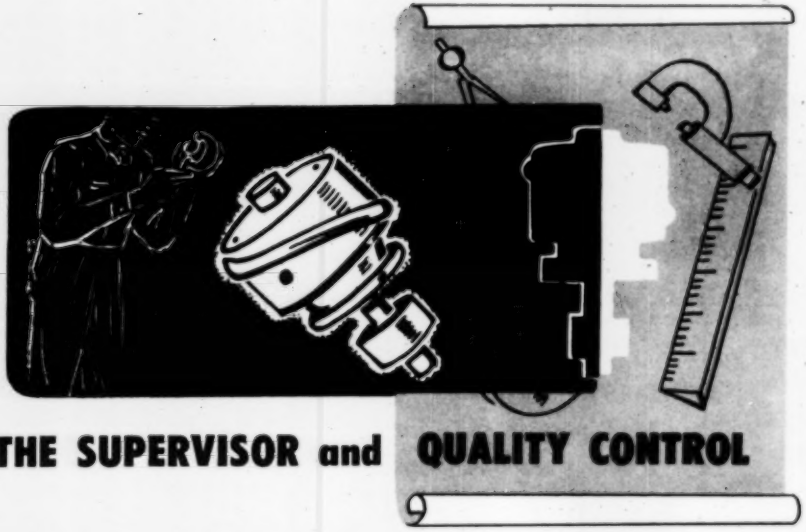


THE SUPERVISOR and QUALITY CONTROL

By J. Frederick Verigan

Manager, Quality Control, Crown & Closure Division
Crown Cork & Seal Company

You can get skilled help in achieving higher standards.

A NAIL FELL OUT of a horseshoe, the shoe fell off the horse, the horse threw the rider, and a kingdom was lost. Mathematically, this was the one instance that just wouldn't happen—but, in the fable, it did.

Today's battles are being fought on a bigger scale—not on horses, but in space. And most components in guided missiles are far more important than the nail in that one-in-a-million horseshoe. For instance, according to a report by the Standard Pressed Steel Company, an Atlas intercontinental ballistic missile contains some 300,000 separate components. In order to put an Atlas on target nine times out of ten (not an unrealistic goal in sudden-death warfare), each component, assuming that all are vital to the Atlas performance, has to have an average reliability of 99.99996 per cent.

If, like a celebrated soap, each Atlas component were only 99.44 per cent "pure," the chance for the

missile's succes would be shown by a decimal point followed by 731 zeros and then a 2! This means, practically speaking, that we would never succeed in getting a rocket to its target.

The fact that missiles *have* successfully completed missions is the result not of fantastic good luck, but of brilliant design and manufacture. Production standards for rocket components are so extremely high that they cannot even be compared with standards applied to regular commercial products. Yet, missile requirements herald a trend: Production standards for more and more products are becoming more and more exacting. Industry will achieve this increased precision only through an extraordinary increase in quality control.

Higher standards

There is no doubt that, even now, customers are demanding better quality. As consumers, we are largely responsible; we constantly seek higher quality in our own purchases. The manufacturer, in turn, requires higher quality from his organization. This dictates higher quality in the component parts and machinery that the organization buys. The cycle continues until all industry has to upgrade quality in order to remain competitive.

This places a definite responsibility upon the production supervisor. No longer can he feel that improving product quality is, vaguely, "someone else's business." It is *his* business, for quality is built into the product by the manufacturing process he controls.

Product excellence depends, of course, upon proper use of materials, machines, and plans, but it depends even more upon workmanship—in other words, upon people. For no matter how mechanized the job, it is still guided by people.

An effective quality-control program rests, then, upon the machine operator who wants to do his best —and does it. The worker cannot be expected to achieve this automatically, on his own. He has to be taught, and by the one person in the best position to teach him and to influence him—his supervisor.

Quality-control groups

Yet the supervisor does not face this job alone. As teammates, he has the inspectors whose measurements of the product help evaluate workmanship. (Have you ever thought that, inside the plant, inspectors play the role of customers in accepting—or rejecting—the product?) An even more helpful ally to the supervisor is the quality-control group. Other groups, too—quality-standards committee, new-products committee, technical committee, research-and-development group—are just as much interested in effecting improvements as the supervisor is.

Too often, the cooperation between the quality-control group and

the supervisor has left something to be desired. This failure may be partly due to a quality-control engineer who doesn't fully appreciate the importance of human relationships. Because of his technical training, the engineer may tend to be more concerned with the science of frequency distributions, laws of probability, control charts, and sampling plans, than with the people involved in production. He may forget that any statistical control system, however well designed, is utterly useless unless the machine operator responds. The technical training of an engineer helps little in solving this dilemma, but the supervisory training of the foreman helps a great deal.

Some supervisors who don't fully understand the purpose of quality control tend to feel that cooperating with the control group means surrendering some of the prerogatives and authority that have traditionally belonged to the manager. Quite the contrary. Quality control is a service group whose function is to *assist* (not compete with) the supervisor. Modern concepts of quality control add a new dimension—to *prevent* defects, as well as to identify them.

How quality-control groups work

The quality-control engineer and his group help the supervisor produce better quality in many ways.

For one thing, they plan the collection of data from the manufacturing process. Scientifically analyzed, this data describes process-capability limits—i.e., within what range the normal process will produce.

Consider an example given by J. M. Juran in his *Quality Control Handbook*—the turning operations of screw machines in a watch factory. In such a process, precision is obviously important. Quality-control men studied one screw machine for several hours, keeping a log of 500 pieces as they were turned out. Then, with a very precise gauge, they carefully measured the five critical dimensions of each piece. These 2,500 observations were put into chart form.

Among other things, the chart showed that restocking the machine caused fewer over-all quality changes than were expected. This told the foreman that it was possible to turn out more pieces with less frequent adjustment and less frequent checking than he had realized—saving him valuable production time.

The chart also showed that changes in the diameter of the screws were very slight. During the run of 500 pieces, the average diameter changed about 0.0001 inch. According to the specifications, diameters were allowed a variance up to 0.0003 inch. Thus, the process uniformity was within about a third of the narrowest tolerance range.

In short, the quality-control group assured the supervisor that

his machines could perform the job according to specifications.

"Then why," the supervisor asked, "am I getting so many rejects from inspectors?"

The control group examined the chart further and discovered that there *was* a major cause of rejects —the operators' gauges. The chart showed sudden drops in the diameters of the screws. Apparently, the operator, *from his gauge*, had concluded that the parts were becoming oversized. Accordingly, he had adjusted the machine downward. Later, the chart indicated, he restored the adjustment—following a check by the inspector. Still later, the operator, unaware of his gauge's inaccuracy, made another routine measurement—and, again, adjusted the machine downward.

Thus, the supervisor learned that his department needed better gauges. He instructed the operators and put in a requisition. Together, the supervisor and the quality-control group reduced the level of rejects in this department substantially, and, at the same time, increased production.

They continued to work together on the same screw-machine operation: Quality control's sample-inspection techniques, applied during production, helped the supervisor to maintain product quality and assured him that a high-standard product was being shipped to the customer.

In order to work closely with the quality-control group, the supervisor should acquire an elementary knowledge of how this work is done. He can do so by taking an in-plant course in quality control, if his company offers one. If not, he can always get help for the asking from the quality-control engineer—who will usually welcome the chance to discuss mutual problems.

Communicating the need

Undoubtedly, the best way for a company to get across its need for better quality is through personal contact with the operator. Such contact is, of course, part of the supervisor's daily job.

One way for the supervisor to tell the story is to explain that competition among similar products often makes product quality the decisive factor in the customer's mind. More sales for the company mean more orders—and more production. It follows that higher sales provide greater job security, both collectively and individually.

Also, every workman should know exactly how his particular operation affects the quality of the end product. A line worker in an auto-assembly plant may not think it makes much difference if he occasionally neglects to put washers under the bolts in a car frame. But when he realizes that, among other functions, the washers help keep the automobile from rattling and thus keep customers satisfied, he may become more conscientious. How-

ever obvious such an explanation may be to the supervisor, it helps the individual operator to relate his job more closely to the final product—and to the over-all reputation and future of his company.

Good personal contacts between supervisor and worker also encourage the operator to make suggestions for improving his particular operation. The alert supervisor will listen carefully and give serious consideration to each suggestion and, if it has merit, will give it a try. Even if the suggestion does not prove practical, it may spark another idea that *is* effective.

Many machines have idiosyncrasies—and capabilities—the designer never dreamed of. These are often discovered by the operator. One small company, for example, had been trying for a long time to get a contract for a very profitable item —a small part for a fishing reel. On expensive reels, these parts are produced with extremely small tolerances, and the company had never quite been able to meet the requirements. But an inventive operator suggested to his supervisor a very simple tooling change that, he thought, might turn the trick. The supervisor tried the idea and it worked. By this simple change, the company was able to meet the requirements and bid successfully for the contract.

The supervisor should, of course, give credit to the originator of a worth-while suggestion.

Visual aids

Talking is one way to get across the need for quality. There is another important method—visual aids. These include signs, posters, and articles in company publications. In campaigning for better workmanship by your subordinates, it's effective to show, as well as tell, what you mean.

Consider, for example, customer complaints. The supervisor may make only a quick announcement: "One of our best customers, the X and Y Company of California, has complained about the quality of our product." At best, the impact of such an announcement will be slight—and quickly forgotten.

But if the supervisor holds up actual samples of what the X and Y company didn't like, his workmen are certain to be interested and impressed. He might hold up faulty packaging—a container ripped open in transit because packers didn't do their jobs adequately, or because production men didn't properly smooth down the rough edges of, for example, a metal unit. The men responsible will be able to see for themselves exactly what happens when they neglect details.

Many companies have display cabinets, strategically located near entrances and exits, to show examples of poor workmanship. Others have found it helpful to post the customer's complaint letter on a bulletin board; this conveys his complaint directly to the workforce

—and in the customer's own words. Letters of praise are posted, too.

Poor workmanship within departments can also be demonstrated by scrap displays. Pieces thrown away one at a time never seem important—but when workers are confronted with a heap of the actual parts scrapped during one week, their reaction is usually prompt and positive. And when, in addition, a placard gives the material and labor costs of the scrapped pieces, the message becomes even more powerful. The effectiveness of such displays is indicated by the large number of companies that use them.

Show your interest

Interest is infectious. When a supervisor shows interest in a company program, the men in his department will also give it their attention. Thus, the supervisor's concern for improving quality is, in itself, a technique for creating comparable interest among subordinates.

A word of warning, however: The subordinates' reaction will, indeed, be "comparable." If the supervisor merely gives vocal endorsement to stepping up quality (but isn't really interested), his subordinates will quickly detect—and reflect—his attitude. The supervisor must convince workers *by his actions* that his interest is genuine.

However he shows his interest in quality work, the supervisor should a) understand it, b) demonstrate his responsibility for it, and c) incorporate it in supervisory decisions.

Suppose that your quality-control unit, ready to apply the latest statistical techniques, wants to install a control chart on each machine—and have the operator maintain it. First, you can help present the charts to employees by introducing the quality-control people, who explain how the charts are used. It is necessary for you, too, to understand how operators are to keep up their notations (in order to be able to answer their questions), and to cooperate with the chart keeping (by helping quality-control people in their checkups). These charts will tell you and the quality-control engineer facts you need to know about your department's output; and you will be able to base corrective action on the information. If you do, it will be evident to subordinates that you are genuinely interested in quality control.

Accentuate the positive

Anyone who has discussed quality-control programs with machine operators has repeatedly heard the comment, "Oh, management talks a good program, all right, but they don't really mean business." As far as the operator is concerned, the supervisor is management. It is therefore imperative that the super-

visor use every method to prove that management *does* mean business.

Try out ideas

One method already mentioned is to try out employees' ideas. If, within practical limits, changes are needed in machinery and authorizing them is beyond your authority, apply for permission to higher management. Let the operator know you have acted on his suggestion and made the request. If it is refused, let the operator know that, too—and why. If extensive retooling can't be okayed, see if you can't effect a compromise purchase. It may help to reapply for new equipment at a later date—for example, when the annual budget has been approved and new purchase funds are available. It is up to the supervisor, at any rate, to campaign assertively on behalf of all employee ideas that will contribute to a better end product.

In addition to the machines they work, most operators are keenly interested in up-to-date tools and gauges. Even if management will not underwrite retooling, it will often endorse purchase of new fittings. Employees are quick to recognize that new gauges, for example, allow them to control their operations more closely and easily.

Consider also suggestions from other sources. The quality-control group itself may suggest mechanical revisions or additions. Customers may suggest improvements in procedure. All positive steps the supervisor takes will help to establish his belief in quality and also to motivate his subordinates favorably toward quality. This motivation can make a tremendous difference in performance.

Motivation for performance

Take, for example, the young man who telephoned his fiancée and reached her right away. But later, when he called his dentist, he couldn't remember the number. He looked it up, wrote it down—then dialed it wrong. The major difference: *He didn't want* to see his dentist. In an industrial situation, unwillingness or apathy might cause a worker to forget one dimension drawn on a blueprint—or the number for setting his machine. Unless he verifies the number and then applies it correctly, he risks losing a batch of product—and adding considerably to the day's scrap total.

The supervisor's particular responsibility in quality control, then, is to motivate workers so they *want* to do right, whether that means keeping down the amount of bark in milling paper or keeping up precision in grinding razor blades. Properly motivated employees inspect their own operations as they perform them. This, in turn, brings about lower costs for more—and better—production.♦

Harnessing the Sun's Energy

A STRANGE 15-story structure is rising on a lonely mountain five miles north of Cloudcroft, New Mexico. Its purpose: To trap and concentrate the enormous energy of the sun's rays. This energy will fire a superhot furnace to test materials for future missiles, manned space craft, and nuclear reactors.

Across the country, at Lexington, Massachusetts, the Massachusetts Institute of Technology recently unveiled another unusual structure. Soon to be put on the market, it's an experimental three-bedroom house that will get most of its winter heat and all of its hot-water supply from the sun.

These are but a few examples of the lengthening list of products and processes using solar power in place of, or to supplement, conventional energy. The step-up in solar-energy applications, say scientists, advances the day when the sun may heat and cool many of the nation's homes, cook and refrigerate food, and, perhaps, supply power to run anything from household appliances to space ships.

Despite the lure of low fuel bills, home seekers probably won't stampede to buy solar houses like the M.I.T. experimental model. For its solar-heating system costs "about six times as much as a conventional system giving equal comfort," says one of the designers of the Lexington house. But solar engineers believe that costs will be cut and sun-operated heating and cooling systems will be a big factor in the home-building industry within 20 years.

A growing number of companies are hard at work developing and selling a wide range of solar-powered products for consumers —among them radios, clocks, cigarette lighters, barbecue grills, and a movie camera with a self-adjusting lens.

Bruce L. Birchard of Hoffman Electronics predicts that "within 15 to 20 years" it may become economically feasible to place enough solar cells on the roof of a home to operate all electrical appliances in the house. Some scientists believe that solar air conditioning and refrigeration will be among the next sun-operated home appliances. These units would probably operate in much the same way as conventional gas-fired refrigerators and air conditioners.

—R. W. BENEDICT AND D. O. IVES,
The Wall Street Journal

MAN'S MIND, stretched to a new idea, never goes back to its original dimensions.

—OLIVER WENDELL HOLMES

TRAINING: IT'S ON-THE-JOB RESULTS THAT COUNT!

By James N. Mosel

Department of Psychology
The George Washington University

THAT OLD SAYING, "The operation was a success but the patient died," applies all too often to industrial training programs.

It used to be assumed that if a worker learned what he was taught in training, he would automatically use his new skills on the job. But there is mounting evidence that training often makes little difference in job behavior. The trainee learns, all right; he just doesn't use his learning.

Obviously, training will be useful only if the techniques that are learned are transferred to the job. To achieve this transfer, three conditions must be met:

First, the subject matter must be usable. That is, it must be close enough to the job's requirements to be applicable.

Second, the trainee must be taught this subject matter thoroughly. To a large extent, this means that he must be given an incentive to learn.

Third—and most important—the trainee must be motivated to change his job behavior according to what he has learned.

And there's the rub. Too much training stays right where it was acquired—in the training situation; it is not "glued into" the job.

Motivation—the basic problem

Before any steps can be taken to correct this situation, the supervisor must realize why it exists. The basic problem is one of motivation.

People are motivated to learn and use new skills only if they feel that what they learn will bring them help or satisfaction—that it will aid them either to get something they want or to avoid something they don't want.

Trainees have certain aspirations and the trainer can take these into account in creating the motivation to learn. For example, the trainee wants to look good to the trainer; he wants to keep up with his fellow trainees; he doesn't want unfavorable reports to seep back to his supervisor. The trainer, therefore, has access to certain psychological incentives to learning.

On the job, too, a worker will use what he learns when he feels that it's gratifying or rewarding to do so. Incentives must exist in the job situation, as well as in the training situation. It is here that the trainer's jurisdiction ends and the supervisor takes over.

The reward structure

What the employee does in his daily work is largely determined by the reward structure—the sum total of rewards and penalties which he encounters on the job. These factors spell out what is, and what is not, in his best interests. The worker tends to do whatever is worth while, *as he sees it*. For a reward or a penalty to be effective, the employee must recognize its benefits or drawbacks to him. And onlookers often misjudge what factors employees consider rewarding or otherwise.

If the reward structure—the system of rewards and penalties—that the trainee returns to the job doesn't support the new ideas he has learned in training, he won't put them into practice. In some cases, the reward structure actually *opposes* the worker's efforts to apply his training.

But the on-the-job reward structure can be changed; it can work for the supervisor instead of against him.

Formal rewards and penalties

Generally, incentives and deterrents within the department fall into two broad categories. First, there are *formal* rewards and penalties, which management makes available through policies, rules, and regula-

tions—promotions, demotions, commendations, pay raises, layoffs, and the like. Though these factors are regulated by standard rules and procedures, they are not entirely impersonal, for they are administered by people.

Informal rewards and penalties

Second, there are innumerable *informal* rewards and penalties; essentially, they are represented by the way people treat us—their approval or disapproval, their expectations of our behavior. These attitudes are expressed by the warm reception or the cold shoulder, the friendliness or aloofness of others. Psychologists call them "informal social pressures."

Workers are often unaware of this informal reward structure; they are so immersed in it that they take it for granted. Thus, social sanctions operate as a hidden incentive system that can either nullify or reinforce the formal system. It is this informal structure that often prevents the application of methods learned in training.

Social pressures

Every job has a social meaning. When we try to change a person's behavior, we are also trying to change his social relations. That's why training is vulnerable to social influences.

Not all jobs are influenced equally by social interaction; in general, the higher ranking the job, the more it depends on interaction with other people, and the more sensitive it is to social relations. Supervisory jobs, of course, are highly sensitive to social values. But there is social meaning even in jobs that depend mainly on physical strength or agility, rather than on relations with other people.

Suppose, for example, that beginners are being trained for a mechanical assembly operation. The trainer knows that method A is the best one for beginners, because it teaches them care and accuracy. So he teaches new men to follow a strict sequence of steps, and stresses that accuracy is more important than speed.

After the training period, the beginner goes into the shop. On his first day, he works beside old hands who are skilled and experienced enough to dispense with several of the steps he has been taught. Perhaps the veterans laugh at his punctilious observance of the prescribed procedure and his slow, though dependable, output. "When you've been around a while," he may be told, "you can knock off some of those fancy frills."

Thus, the trainee is confronted by a reward structure that punishes him if he sticks to his training. He doesn't want to look like a greenhorn; he wants to be accepted by the other workers and to have a satisfying relationship with them. Method A may become a symbol of everything the beginner finds socially unpleas-

ant about his job. Naturally, he avoids it and tries to imitate the methods of the veterans—even though the result is poorer work.

Training the "veterans"

An alert supervisor, however, can exert a great deal of influence over the men already in the department, the source of many informal rewards and punishments. He can often teach people who oppose the reward structure to *support* it instead. One way to do this is to use "refresher training"—not necessarily to change the job methods of these men, but to orient them in what others are being taught, and why.

Another approach is to involve experienced men in training others. In one organization, old hands are expected to take an active part in the orientation given to newly hired employees. Then, when the new men are placed on the job, the veterans can't say, "That's the way they teach you in training, but don't pull that fancy stuff here." If they did, they would be disparaging themselves.

Training the trainees

Sometimes, trainees themselves can be taught to meet and overcome any negative influences they're likely to encounter. All training should include advice on overcoming the problems that may come up when new lessons are applied to the job. Even a simple reminder that newcomers aren't expected to keep up with the output of older employees can work wonders. And when the veterans are included in this kind of preparation, the chances of improving the departmental climate are even greater.

These methods aren't sure-fire ones. If the basic problem is hostility to the supervisor or to the company, the supervisor will have to root out the reasons for this antagonism and do something to remedy the situation. In any case, attention to the influence of the work group on the trainee is essential.

The supervisor's influence

Fellow workers are only one source of informal rewards. Another source is the supervisor himself. And his influence is stronger because he has more power; because he controls also many *formal* rewards and penalties, which are administered on his recommendation. Everyone tries to find out what his superior wants, and to modify his behavior accordingly—in other words, to conform to his boss's expectations.

How does an employee learn what his boss expects of him? He may be told, of course. But the worker may also develop his own ideas from watching the way his supervisor behaves. If the foreman is loud and boisterous, the men in his department may follow suit. If he is quiet and firm, the majority of his workers will tend to be serious on the job. The supervisor's example thus helps to create the

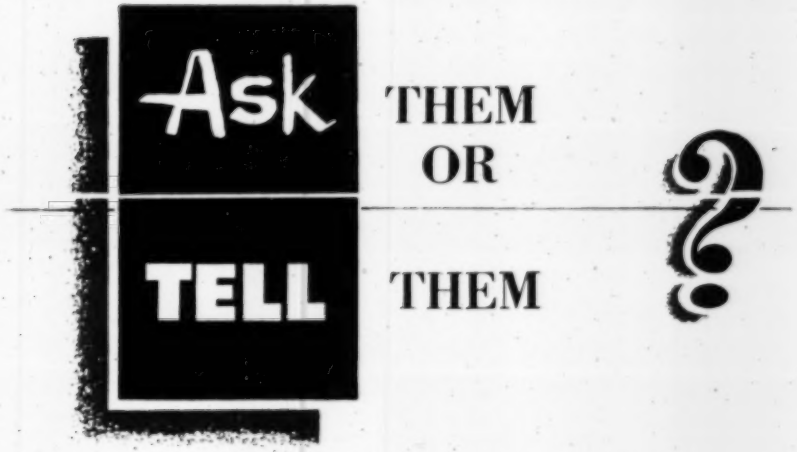
organizational climate in which the employee works—a climate that defines what is worth while for him to do.

No training program can be effective, therefore, unless the supervisor practices what the training teaches. Only the manager himself can bridge the gap between training theory and day-to-day practice on the job.

A general once told the writer, "I want you to teach these men democratic ideas, and if any one of them argues with you, I'll knock hell out of him!" And a civilian administrator was heard to say, "My men are going to think for themselves, even if I have to get down there and do it for them!"

It all adds up to this: To get maximum value from training given to his men, the supervisor must see to it that his departmental climate—or reward structure—supports rather than nullifies the training. New ideas taught in class will "stick" only if they are bolstered by the informal lessons taught by the foreman and the work group every day. ♦

"Gentlemen, these computers operate on a very simple digital counting technique."



The Martin Company

There's a time to give orders—
and a time to ask for volunteers.

WHAT TYPE OF ORDER will produce the best results?

All orders fall into one of four general classifications: 1) *the call for volunteers,* which, while not an order in the strictest sense, must be considered because it is a way of getting something done through a subordinate; 2) *the implied order*—suggesting that something needs to be done and leaving it to the doer to go ahead on his own initiative; 3) *the request*—a mild, tactful form of order, starting with "How about doing this—" or "Would you find out—" or "I wonder if you could—"; and 4) *the direct order*—a straightforward command to "Do this" or "Get that" or "Don't do such-and-such."

Which do you choose?

Since circumstances vary, and since people are individuals, no one of these types will serve every need. Which type would you choose:

—For the touchy, sensitive worker?

—To correct the worker who has become lazy or indifferent?

—For the hard-boiled fellow?

—For the dependable man, deeply interested in his work?

—To order a person to correct his own error?

—To correct a worker who chron-

ically violates rules and regulations?

—To get a disagreeable job done?

—To develop judgment, initiative, or a sense of responsibility?

—In an emergency, when speed is essential?

Keep these in mind

Here are some general guides for adapting an order to a particular situation:

A request doesn't offend the sensitive worker, while a direct order often antagonizes.

The direct order—if not used too frequently—stands out emphatically. It tends to shock a worker out of his lethargy, and may save a dismissal.

A request may partly melt the hard-boiled man, and is worth trying before a direct order.

The implied order usually gets best results from the dependable worker. But it is *not* for the inexperienced or unreliable.

The first time an error is made, *a request* to correct it adds the friendliness that keeps a man on your side. The *direct order* may be advisable if the error is repeated.

The direct order is appropriate for the chronic violator—and if most of your orders have been requests, the change to a direct order will carry emphasis.

The call for volunteers is often a challenge. It produces good results when the job is disagreeable, calls for special effort, or involves unpopular overtime. But *don't* use it to escape responsibility for giving assignments in the best interests of production.

To develop ability and judgment in a promising employee, the *implied* or *suggested order* is a good way of trying him out and putting him on his own. Close follow-up may be required, however.

The emergency usually requires a *direct order*. ♦

Marriage and Managers

THERE ARE MORE married men and women in the American workforce now than at any other time in history. Nearly nine out of ten of the currently employed managers, officials, and proprietors are or have been married, according to the Metropolitan Life Insurance Company's *Statistical Bulletin*. Eighty-four per cent of all the 25-to-34-year-old men in the 1957 working population were married, compared with 74 per cent in 1940. The percentage of married men over 35 also showed an increase, although a much smaller one.

The ratio of married women to single ones in the workforce is also greater than ever. Of all the 25-to-34-year-old women employed in 1957, 79 per cent were or had been married, a rise of 25 per cent from the 1940 figure. Seven out of eight of the employed women 35 years old or older were married.

First Aid: What to Do about Poisoning

QUICK HELP for cases of accidental poisoning can now be obtained through Poison Control Centers in at least 46 communities.

Their primary purpose is to *prevent* as many accidental poisonings as possible by educating and alerting the public. But they are also geared to giving quick and accurate information on how to deal with whatever dangerous material has been swallowed.

The centers prefer to limit their service to doctors or hospitals, but some of them will give information and advice in any bona fide emergency.

For information on how to reach the Poison Control Center nearest your plant, contact the nearest branch of the Committee on Accident Prevention of the American Academy of Pediatrics, the American Public Health Association, or the American Medical Association. When no doctors or hospitals can be reached quickly, the Poison Control Center may mean the difference between life and death.

—*Journal*
(American Association of Industrial Nurses)

Why Some Supervisors Have SPLIT PERSONALITIES

By Paul J. Gordon

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Emory University

MOST SUPERVISORS—veterans as well as newcomers—find themselves sooner or later struggling with the symptoms of a conflict so prevalent that it might be called an occupational disease: supervisory split personality. This paralyzing disorder results from the conflict between the supervisor as a leader and administrator and the supervisor as a skilled, conscientious worker. The job requires the supervisor to be a leader and administrator; but he may still see himself primarily as a skilled, conscientious worker.

Supervisors trapped in this conflict need new concepts of supervisory work, and techniques to achieve these new concepts. Most people have seen:

—the office manager who rechecks and recalculates every clerical procedure himself.

—the shop foreman who spends most of his time on production records and machine maintenance.

—the stockroom head who ignores the working relationships among his employees and the people who call at the stockroom while he spends time arranging a "foolproof" system.

The basic problem

Though many supervisors are top-flight technicians, office workers, manual workers, or professional people in some specialized operation, one basic problem keeps reappearing. They seem to have a universal need for more information on, and a clearer understanding of, their administrative and personnel responsibilities.

Those who have come into the job with some degree of technical, professional, or other special proficiency are likely to say:

> What is my job? Am I supposed to do the work, to supervise exclusively, or both? . . . I am trained to conduct highly technical research . . . or to advise on tax matters . . . or I attended professional courses in engineering and I am not doing engineering work . . . or I am a teacher, a librarian, an auditor, a field man—not an administrator . . . or I can do more work, tell better if work is done right than any member of my staff . . . I know very little about personnel—we have a personnel department for that . . . Our job is to get these gadgets out, to make sales, to get things done . . . There isn't much planning here . . . we're busy all the time . . . act as needed . . . don't have time for records.

The fact is that the supervisor's job is not always clearly conceived or defined by higher management. And even when it is defined, when the clearest written descriptions exist, the supervisor himself must still examine his duties in the light of his personal experience. Just what is he being paid for? And how does he actually spend his time?

Time for a change

The change from a rank-and-file job to a supervisory one involves more than a change in a list of duties. It requires a change in concepts, in emphasis, in the sources of job satisfaction. At each new level, as a person moves up through managerial jobs, further changes are required.

The difficulty of making these changes shows up in representative statements like these:

> The people in this department take up so much of my time with their personal problems, their personal disputes, and their requests for job instruction that I have little time left for the important work of making out production records.

> Training people in this department takes up so much of my time that I have to continue my more specialized work after hours. I can direct the

Adapted with permission from an article that appeared in *The Modern Hospital.*

others, and I think I do a good job, but I am much happier working with a small group where I can work too.

The conflict

These quotes suggest that even seasoned supervisors often prefer to withdraw from the responsibility of supervising and developing people and to spend more time on technical, manual, or clerical work. This preference is understandable If the supervisor has great technical skill, but little training in supervision, he may feel a greater sense of security and accomplishment in doing work that he feels he knows.

Nevertheless, when he spends a major portion of his time performing work he should assign to others, he operates below his proper level, effective supervision is stymied, no one develops, and production costs are higher than they should be.

The human costs are high, too. For the conflict between the desire to perform work directly and the duty to supervise others can result in incalculable tension and fatigue. The supervisor, his deputies, and his family may bear these stresses without even realizing what has been happening until some major crisis or breakdown occurs.

The more highly skilled the supervisor is along technical lines, the greater may be his sense of conflict. His conscience nags him either way: He knows he must delegate, yet he takes on the responsibility with inner turmoil, because he's not sure his subordinates will do the job as thoroughly and accurately as he would himself. Furthermore, he feels that his technical skills are diminishing; and he doesn't recognize the growth of any new skills.

The truth is that the attitudes, the knowledge, and the skills required of the supervisor are different from those required by the rank-and-file worker. The shift is away from professional and technical skills and toward administrative and social skills. A supervisor's human-relations abilities are at least as important as his professional and technical qualifications.

Steps in self-development

Management usually provides some training for new supervisors in the form of courses and supervisory conferences. This is all to the good—but the most important development is self-development, and the supervisor can take concrete steps to help himself. The steps suggested may sound prosaic; certainly they will take some time. But because they include an analysis of *personal experience*, they will produce results more valuable, more lasting, and more applicable to the supervisor's situation than he could achieve in any other way.

Step 1 is to make an inventory of the job. This begins with writing out a job description—not the official one nor the ideal one that no person could match—but simply a list of actual responsibilities. The emphasis belongs not on what the

supervisor *should* do or *should* be but on what he *is now* doing or is about to do. The duties should be stated in specific terms, so that he can analyze what he has described.

Step 2, to be taken not once, but over and over again until it is fully understood, is to read the job inventory (and revise it if necessary) in the light of questions like these:

A. The nature of the job

What are my present duties?
Which are most important?
Which deal with materials and which with people?
What emergencies are likely to develop?

B. Timing

What must be done every day?
Which jobs must be finished at regular intervals?
What tasks take different amounts of time under different conditions?
Is there any free time available in case of emergency?
Has time been set aside for planning?
Have I listed everything in order of importance?

C. Delegation

Which jobs must I perform personally?
Which can I delegate, and why?
How can I alter my plan so that I can delegate more of the things I do myself?

D. Personal preference

What duties do I enjoy most?

E. Skills involved

Which duties involve my professional and technical training?
Which utilize administrative and supervisory skills?
Which do I find easiest? Hardest?

The values of this check list lie in the fact that it will help the supervisor to recognize his own feelings, and may guide him in making important changes. If he can find no answer to the question on what duties he enjoys, for example, it may be time for a change of jobs. If he finds that he delegates *only* the jobs he dislikes and retains *only* those he likes, re-examination may be in order. If he finds himself postponing important administrative duties in favor of technical chores, he may be caught in the split-personality dilemma. Even though this double function may be built into the job, he'll feel better about it when he has worked out a clear sense of priorities and a concrete plan for dealing with his problems.

A valued skill

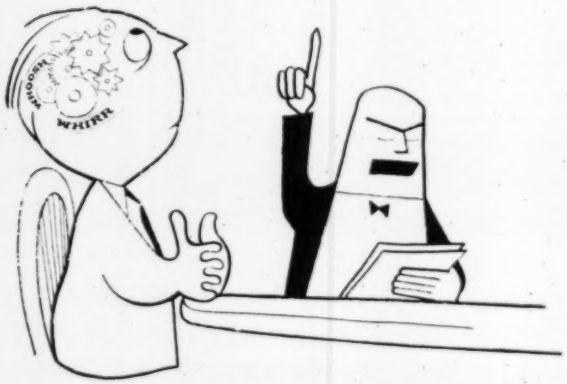
The rank-and-file worker who lives within every good supervisor should not be killed off nor even suppressed—but he should be definitely subordinated. This change will occur almost automatically as the supervisor learns by analyzing his own experience that supervision is a valued skill, that this skill includes leadership, and that the most important job of a leader is not to produce with his bare hands, but to evoke production from the hands and skills of his subordinates. ♦

How to Wreck a Conference

Conference wrecking is among the most ancient of the arts, dating back at least as far as the Stone Age. Some of the methods used by Neanderthal Man to break up discussion or silence an opponent are, in fact, still popular today.

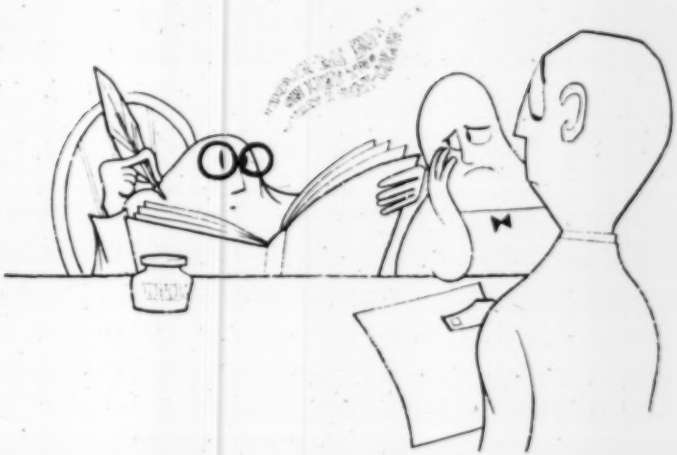
To wreck the modern, highly organized conference, however, requires a certain refinement of approach. Cave-dweller tactics have been replaced by subtler, though no less effective, techniques. Those outlined below—compiled from extensive research on thousands of meetings—will serve as a handy refresher course for the veteran conference wrecker, and will carry the novice through his first few sessions. As he gains experience and adroitness, new approaches will suggest themselves.

IF YOU'RE A PARTICIPANT . . .



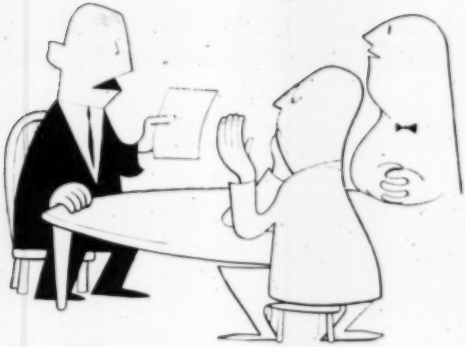
Don't listen to other people; they will only confuse you. Use the time while they're talking to think up your next remarks.

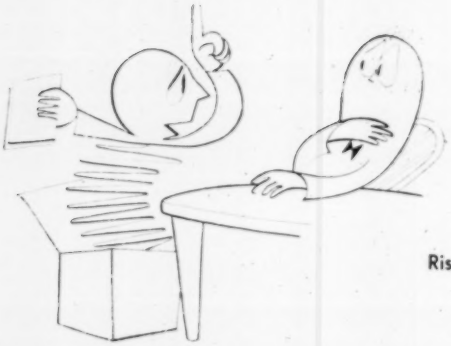
Defend yourself! Anyone who openly disagrees with your viewpoint probably has it in for you.



Take careful notes on everything, including date, time, temperature, and barometer readings. If you don't catch every word that's said, ask for a recap.

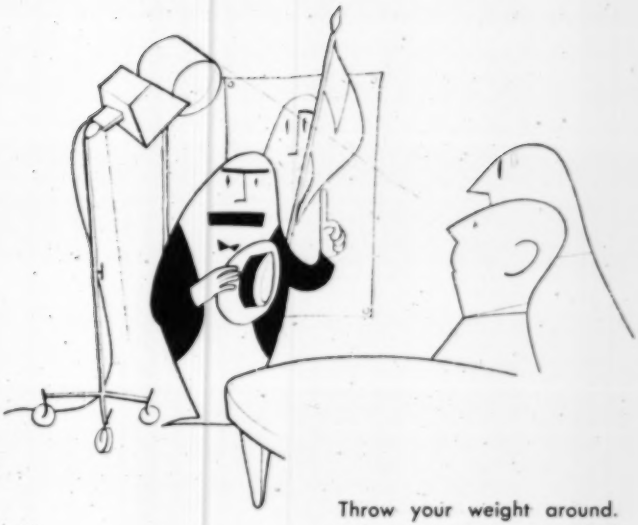
Let the chairman do all the work. It's his meeting.





Rise frequently to points of order.

Side with the majority, regardless of your real opinion.

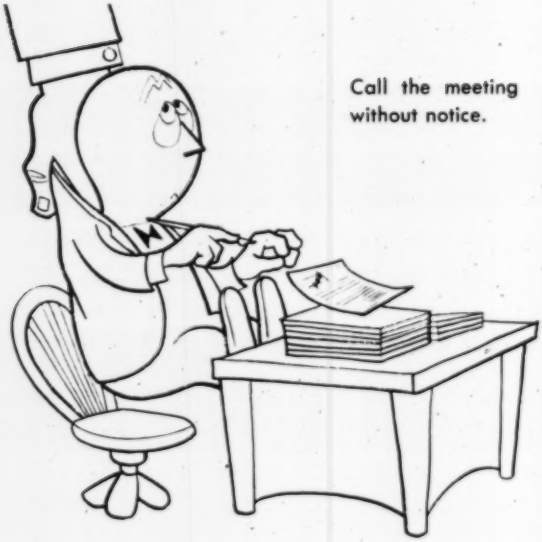


Throw your weight around. Let them know how you feel about every subject, whether you're informed or not. They may not get much out of this, but if your voice is loud they'll know you're a man to be reckoned with.

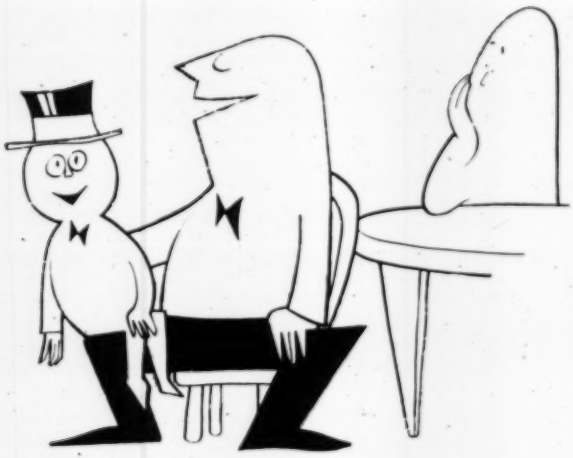
. . . and try these additional devices:

- Come prepared with the only possible solution.
- After the first 15 minutes, consult your watch frequently. If this isn't noticed, drum your feet or tap your pencil briskly on the table.
- Bring a voluminous report (the more charts the better) on every aspect of your own operations, indexed according to sales, freight loadings, intermodular bias correlation, etc. Each time one of these subjects is mentioned, read the appropriate section from your report. (And don't forget to explain the footnotes.)

IF YOU'RE CHAIRMAN . . .



Call the meeting without notice.



Answer all your own questions. It may take some juggling, but it's the only way to insure the right answer.

Squelch any new approach not outlined on the agenda.

Change the decisions reached at the meeting—but don't let the others know. (It might hurt their feelings.)

. . . and if all these maneuvers are exposed, try the following:

- Keep the purpose of the meeting a secret.
- Warm up the meeting by devoting the first quarter hour to an account of your trip to the Thousand Islands. Pass around snapshots, by all means . . . souvenir matchbooks, too, if you have them handy.
- Instead of preparing information in advance, send out for each item as needed. This gives participants time to check out for quick phone calls, from which they may never return.
- Track down all fascinating issues, lead where they may.

• *Text by* LYDIA STRONG
• *Drawings by* AL HORMEL

Good Housekeeping is Good Management

By C. B. Alvord

Operations Personnel Manager
United States Gypsum Company

The stuff in the corners makes more difference than you think.

NOT LONG AGO, a department supervisor told me that one of his company's executives, on an inspection tour of the branch plant, was critieal of the department's housekeeping. The supervisor wondered why such emphasis should be placed on housekeeping, and if other parts of the operation weren't more important.

Perhaps they are, but the experienced supervisor knows that few factors in any operation count for more than good housekeeping. Why? Because good housekeeping is a symptom of conditions within the organization, and is, therefore, a basic measure of plant operations.

A measure of standards

First, good housekeeping is a measure of the standards set by the boss—and not just of housekeeping standards. For a good manager

doesn't have different standards for different areas of responsibility. Sloppy housekeeping means sloppy standards of performance that will eventually show up in less obvious places.

Enforcing high standards

Second, uniformly good housekeeping is a measure of the supervisor's willingness to *enforce* his high standards.

In a plant where the equipment hadn't been painted for many years, no one paid much attention to some grease leaking from bearings, or to an oil gauge attached to the machine with friction tape and a piece of wire. When the equipment was finally painted, however, these instances of poor maintenance showed up—and were immediately corrected.

An accumulation of dirt on an unpainted lift truck had to be removed before the truck could be painted. Keeping the paint job clean required better maintenance of the entire unit and more careful use of the truck; and this in turn meant less damage to stock stored on the floor, near the aisles.

Painting the walls and equipment of another plant revealed a sizable accumulation of worn-out parts and other junk that had previously stood unnoticed in the dark corners.

Organization and follow-up

Even the highest standards and the greatest willingness to enforce these standards aren't enough. The supervisor still needs the ability to *organize*, plus a sound method of *follow-up* to reach his housekeeping goals.

Two department supervisors who believe that they have equally high standards and an equal willingness to achieve these standards actually obtain widely different results. On the wall of one supervisor's office is a map of the department with colored areas that show the housekeeping responsibility for each crew member. A competitive spirit prevails throughout the department, and housekeeping is excellent. In the other supervisor's department, the housekeeping responsibility is less well defined—one man has been told to take care of "floors," another "motors," another "equipment." Anything not specifically covered in this way doesn't get done until the supervisor takes the time to direct someone to "clean out that pit" or "sweep off that sill."

On the other hand, a splendid plan can end up in poor housekeeping if the supervisor does not follow up with personal inspections. In other words, good organization and effective direction will show up in plant housekeeping.

A reflection of morale

Finally, good housekeeping is usually a reflection of good morale because it results from the same factors that produce good morale: good working conditions, good organiza-

tion—and good management.

The men in a machine shop were accustomed to working at dirty benches; turnings and shavings were permitted to accumulate under shop equipment; hand tools owned by the machinists were kept in untidy tool chests cluttered with junk. Expensive precision-measuring tools owned by the company were treated with no better care; as a result, they had lost their accuracy. The more highly skilled machinists could not do their best work under such circumstances, and they resigned, leaving only less qualified men in the shop. Mediocre machinists, working with inadequate tools, were unable to turn out the precision diework required in this shop. The final product was unacceptable to many customers, and the company lost a great deal of business.

At this point, the machine shop was placed under the direction of a different supervisor. The entire shop was rearranged, painted, and given a thorough cleaning; and good lighting was installed. Workbenches were sanded and varnished. Machinists put on white aprons. Rules were made to be sure that lathes and other machines were cleaned after each use. Production people were required to clean dies before delivering them to the machine shop.

On their own initiative, the machinists then began to clean and sandpaper their personal tool chests; they varnished them to match the benches on which they worked. They began to take better care of the small tools. Highly skilled machinists were again attracted to the company. Dies going to production were now in condition to do the job expected of them; as a result, down time on production equipment was reduced and better-quality products were produced. In short, the morale and efficiency of an entire organization were boosted when an unsatisfactory housekeeping situation in one department was corrected.

Many managers have had personal experience of situations where housekeeping made a tremendous difference in morale, productivity, profits, and individual earnings. This, among other things, is what the visiting executive may think of when he strolls through your department, peers into the corners, and comments—adversely or favorably—on your housekeeping. ♦

PLANS, SYSTEMS, AND CONCEPTS have a rate of obsolescence just as a piece of machinery does. . . . Originally serving appropriate purposes, they tend to become encrusted with habit and tradition to a point where they actually become deterrents to fresh thinking.

—M. P. McNair

By Forrest H. Kirkpatrick

Wheeling Steel Corporation

1. Recognize at all times and under all circumstances that you are supervising *people*. Never permit anything in your department to become more important in your mind than the people.
2. When you think in terms of people, always remember that *the whole man* is your concern. You are not dealing with a "workman" or a "mechanic" but with a person whose emotions, purposes, prejudices, sympathies, feelings, and ideals are part of his life—both on and off the job.
3. Do *not*, by your words or acts, contribute *unnecessarily* to employee dissatisfaction in your department. Note the stress on the word "unnecessarily." Employee dissatisfaction is unnecessary when it is caused by a supervisor's carelessness, sharp tongue, bad temper, poor planning, or lack of fairness.
4. Recognize that there are *two sides* to every situation and that you do not know the story until you have heard the other side. Do not assume that your story, or the story you know, is always the right story or the whole story. In every situation, keep your mind open until all the facts are in.
5. *Take the initiative* yourself when something that affects an employee is wrong or unfair. Let your people see that they can depend on you to go to bat for them.

If employees run to the union steward with everything, if they make a grievance of everything, the supervisor is partly to blame, because he is not on the job, in the way that he should be.

6. Recognize the *importance of time and place* in dealing with people. Be a good stage manager. Whenever you have a choice, pick the most favorable time and the most favorable place for giving employees good news or bad news, for giving them criticism or a pat on the back, for granting a request or denying it.
7. Be willing to accept responsibility for *your own mistakes*. People like a man who is big enough to admit when he is wrong, and if they cannot like him, they at least respect him. Never underestimate the real importance of your personal relationship with your workers. It will work for you or against you, but in the long run it will never be neutral.
8. Remember that when you are on the job *you live in a glass house*. People see more than you realize and they measure you by your actions rather than your words.

H_2O = *Efficiency*

THE IMPORTANCE of drinking the proper amount of water, especially in warm weather, has long been recognized. Through the years, educational campaigns have urged workers and managers alike to "drink plenty of water."

"The trouble is," says Dr. Lucien Brouha, "no one ever found out how much water was enough. The individual was left to judge for himself, and he could not do this accurately."

Previous theories held that the human body is a self-regulating mechanism that automatically demands the water it needs. But Dr. Brouha stresses that, although self-regulation operates to some extent, there is a time lag. Ordinary thirst does not cause the body to catch up on its water supply quickly enough to maintain top efficiency and comfort.

In heavy work, a man loses as much as 12 quarts of water during eight hours of work. If the loss isn't made up by drinking water, the man's temperature and heart rate go up, and he becomes tired quickly. He does not usually feel thirsty until long after the effects of too little water show up.

For example, Dr. Brouha found that when drinking was insufficient to replace water loss (which he measures by body weight), high heart rates and body temperatures over 100 degrees were frequent. When workers drank more water, body temperatures over 100 degrees disappeared, and heart rates did not go as high or take as long to come back to normal. The men were physically fresher and were able to do much more at the end of the day.

Even sedentary workers in air-conditioned offices lose about a quart of water a day through perspiration. All workers suffer more from fatigue and a drop in on-the-job efficiency if they do not make up water losses immediately.

Keeping a balance between fluid intake and fluid loss is a matter of training, because most people who sweat profusely will drink only about two thirds of what they eliminate on an hourly basis. In order to maintain the proper water balance, a worker must drink more than would be necessary just to quench his thirst.

—ROSLYN WILLETT, in *Safety Maintenance*

IF YOU WILL think about what you ought to do for other people, your character will take care of itself.

—WOODROW WILSON

DID YOU KNOW . . .

Before and After: Rest periods help to increase production before a break as well as after it, say Drs. G. Lehmann and O. Graf. After a series of experiments in English and German factories, the doctors found that most employees pace themselves better when they know a break is coming, and return to their jobs refreshed after the rest period.

Work Therapy: Probably the best way to cure an alcoholic worker is to keep him on the job while he tries to stop drinking, says Dr. Thomas H. Hogshead, of Du Pont. This company's medical division, cooperating with Alcoholics Anonymous, has rehabilitated 65 per cent of the alcoholic workers who stayed on the job after their illness was discovered. "The fact that alcoholism is accepted as a disease . . . and treated as any other illness . . . has opened the way for the rehabilitation of hundreds of employees," reports Dr. Hogshead.

Gardens for Hire: A new kind of fringe benefit is offered garden enthusiasts at the Goodyear Tire and Rubber Company in Akron, Ohio. For a small fee ($5 to $6.50), an employee can rent one of the company's 360 garden plots. Goodyear takes care of watering and plowing the land—the workers do the rest.

Posthumous Vacation Pay: If a worker dies before taking a paid vacation to which he's entitled, can his heirs collect the vacation money due him? The answer is yes, according to a recent ruling of the National Railroad Adjustment Board. A seven-member panel ruled that a paid vacation is the same as earned wages, and if an employee dies with vacation time due him, a "money obligation" to his heirs must be recognized.

Close to the Vest: The Army's problem—what to do about battery failure caused by extremely cold weather. The Signal Research and Development Laboratory's solution—take advantage of body heat. In cold areas, U.S. Army radio operators now wear battery units in their vests, where they last about 10 times as long as they used to.

SM's Roundup of Recent Research Findings

Who Needs Money? Everyone in the United States may be penniless 50 to 75 years from now, and no one will mind a bit. That's the prediction of Designers for Industry, a Cleveland company specializing in data-processing equipment and electronic systems. In the future, says the company, all financial affairs may be conducted without cash, coins, or checks. Instead, each person will carry an "electronic pocketbook," with auxiliary data-processing equipment for employers, businesses, and banks. All purchases will be made by punching the right buttons, rather than handling money. The company claims that all the necessary components of such a system could be built immediately.

Loafer's Heart: Not enough work, as well as too much, is a contributing cause of heart attacks, says Dr. W. Raab in *Today's Health*, a publication of the American Medical Association. Dr. Raab's prescription: more but wiser activities instead of "physical and mental take-it-easyism," which can lead to what he calls "loafer's heart."

Recreation Benefits: Most of the American companies sponsoring off-duty activities for their employees report definite benefits from their programs. Of the 287 organizations surveyed by *Mill & Factory* magazine, 68 per cent have some kind of organized off-the-job activities. Of these, more than half say that the programs have cut turnover, and 22 per cent say that absenteeism has dropped. Other benefits cited: better morale (34 per cent), easier recruiting (32 per cent), and increased productivity (17 per cent). Only 9 per cent of the respondents report that their off-duty programs have had no discernible effects.

Up in Smoke: Last year, 125 major industrial fires in the United States and Canada caused property losses of $95 million. This fire toll represents an increase of $25 million from the previous year, reports the National Fire Protection Association.

Fair Shake: Even the Hawaiian hula is going up in price. Most of the dancers are union members, and the asking price for ship greeting is now at least $10 per dancer—double the old wage.

YOUR *Personal* MANAGEMENT

WHY YOU NEED A WILL

By Donald I. Rogers

Business and Financial Editor
The New York Herald Tribune

WHERE THERE'S A WILL, there's a relative" may strike you as the last word in cynicism; but, like many such tag lines, it is not without its kernel of truth.

With a will, though, you can be sure that the right relative is going to be there. If you die intestate (without a will), property you've worked a lifetime to accumulate could end up in the hands of a forty-second cousin you last saw twenty years ago and have cordially loathed ever since.

Stranger things have happened. A businessman, a highly successful one, died in his mid-fifties. He had suffered from the common delusion that making a will was for "older fellows." He left a wife, two sons who were already well launched on their own careers, and $30,000.

Since he died without a will, the state stepped in. Two thirds of his estate went to the "children" and one third to his wife—who had been entirely dependent on him for her support. As it turned out, both boys wasted no time in turning back their share to their mother. But suppose they hadn't? The widow would have been left a legacy of gnawing worry and uncertainty.

Without a will . . .

Another man married a girl over the rabid objections of her father. Jerry was doing well in the advertising business; he had something of an eye to the future. He bought a house and put it in Mary's name. His savings account grew to respectable proportions, in Mary's name. His stocks were doing well too, in Mary's name. Everything was in Mary's name. He didn't "need a will."

Sometimes Jerry used to think it was a pity the old man didn't communicate with them, even at Christmas. It might surprise him to learn how well Mary was provided for.

Then Mary died. She didn't have a will, either. Unbending to the last, her father didn't even attend the funeral. News of money brought fast action, though; several weeks later he did show up, with a lawyer.

All he wanted from Jerry was half of *his* house, half of *his* savings account, and half of *his* stocks. Under the law, he had a right to his share, and he got it because Mary had not made a will.

Still think you don't need a will? Even if you leave an estate no more substantial than six neckties and a dog-eared copy of an old textbook, you have a right to say who will inherit them.

In fact, you probably have a much longer list of assets than you realize. By the time you reach forty, and usually a lot sooner, you've probably accumulated a house, a car, furniture, a wardrobe of one kind or other, sports equipment, maybe even a fairly expensive array of woodworking tools.

All these represent an investment. Turned into cash, even on unfavorable terms, they could help to feed and clothe your family for a while.

In the absence of a will, your widow will probably be appointed guardian of any minor children and thus be pretty well in control of things. She might, however, run into red tape in probate court. She might have to get special permission to sell your golf clubs, say, to meet the bill at the butcher's.

What wills do

A will can not only put your property into the hands of the people you really want to take care of; it can also save endless administrative costs and cut tax liabilities.

When you make a will, you

From the book, *Make Your Income Count*, by Donald I. Rogers. © 1958, by Donald I. Rogers. Adapted by permission of Henry Holt and Company, Inc., New York, N.Y.

choose the executor, the person who is going to supervise the distribution of your assets and the payment of any debts you may have left. If you do not leave a will, you may be leaving this job to a stranger and to chance.

Let's assume that a court-appointed executor will be rigidly honest, that he will not siphon off property that should be going to your family. That is a nice assumption but is it the kind of assumption you want to make your family pay for?

And the court appointee is entitled to a fairly substantial fee for his work; this comes out of the estate. With a will, you can probably save more than 50 per cent on administrative costs.

A will can also save you taxes, even on a small or moderate-sized estate. If your property goes outright to your wife, it qualifies for a 50 per cent marital deduction. Without a will, only a third of the estate may go to your wife—the children get the balance—and consequently a sizable portion of the marital deduction can be lost.

Made to order

Tax and administrative problems are major factors common to most estates, but they are about the only two that are. Every family has its own peculiar problems. This is why you can't merely use a standard will "form" and expect things to work smoothly after you're gone.

Many wives, for instance, know how to handle household money on a day-to-day basis. They know where to purchase the best cuts of meat for 10 per cent less or the remnants for making the finest-looking new draperies at bargain-basement prices.

How about big money, though? Would your wife be able to manage an estate worth $30,000 or would you do better to protect her by some kind of trust arrangement?

How about the remainder of the family? What is the best way to take care of the youngsters until they become self-supporting? If you are taking care of your parents now, how can you best guarantee that this support will continue after you're gone? Is one of your children less self-reliant than the others: will he need extra protection?

See your lawyer

These are questions that only you can answer, and there are as many different questions as there are families. That's why you should go to a lawyer when you draw up your will; make sure he's a good one.

If he is a good one, your will won't be treated as routine. You can ease the process by doing a little preliminary soul searching. Take inventory. Whom do you really want to help in the family, and what do you possess to help you do so?

Make a check list, a rundown on your life insurance, checking and savings accounts, stocks, money owed you, jewelry, personal proper-

ty, profit-sharing agreements, and other financial data.

This will help your attorney to help you. You can further expedite things by making a memorandum of personal effects: cameras, silverware, books, and other items you value. To whom would you leave them? Spell out the list, giving name, address, and relationship. Doing so will save time and trouble. So will a sound concept of joint ownership and what it will do for you, a concept that is surrounded by numerous fallacies.

Joint ownership

It is a great mistake, for instance, to think you will save on inheritance taxes by the mere fact that a house, a savings account, or an investment portfolio is held in the name of both husband and wife. If you die, your wife's share of any of these can be taxed, can be included in your estate, and can therefore increase rather than lessen your tax liabilities.

This happens because the burden of proof is often put on the survivor. She (or he) has to prove contribution to the jointly owned asset. This is frequently difficult. It is the one reason you and your lawyer should thoroughly explore any joint tenancies that show on your asset list. He may be able to save you money.

Even joint checking accounts or jointly held safe-deposit boxes are not immune to legal ambiguity. On the death of one of the owners the first thing a bank will do to either a checking account or a deposit box is to freeze the *status quo*.

Should you die, the bank will not allow your wife to write a check against the account. It will even refuse to honor any checks that have not cleared before your death. Similarly, it will seal a safe-deposit box, even though your wife's jewelry, for instance, is clearly marked as her own, until the tax examiner has gone through its contents.

In some states the way to get around this impasse is to set up "joint-or-survivor" accounts. This is important because the first three months or so after your death may leave a gap that will have to be filled with cash from one source or other.

It takes time for the insurance to get rolling; it takes time for a probate court to move. In the meantime, life for the family goes on and so does the customary succession of bills in the morning mail.

How long will this lag be? It will vary from state to state. But besides the "joint-or-survivor" savings or checking account, there are several other ways to plug the gap.

For one thing, you can establish a special bank account for your wife by way of gift. You can assign her an insurance policy, preferably one with a relatively high paid-in value that she can borrow against, pending final settlement. You can also establish a limited trust with right of emergency withdrawal. Any of

these alternatives, or perhaps a combination of them, can help tide her over the initial waiting period.

As you can see, it takes plenty of planning and lots of detail work to come up with a really adequate will. But even when you've got it shipshape, you're still not out of the woods.

First, if your wife has any property of her own, it's a good idea for her to have a will drawn up too.

A changing document

Second, circumstances change; family relationships change. Since the will is a living document, the embodiment of your plans for your family, it must inevitably change with them. Death may be responsible for some of the changes you will have to make. Some of your beneficiaries may die; so may your executor or trustee. These changes will have to be compensated for. Births can make a difference, too; new children or grandchildren may make you want to reapportion your assets in your will.

Your assets can change, and that's why it's a good idea to take financial inventory at least once a year and measure the change in the context of your will. You may never know what's happening after you're gone, but a carefully drawn will can *help* to make happen what you want to happen. ♦

"Hopkins, I admire a man who isn't afraid to say yes."

Safety Rainbow

CLEAR MARKING of danger spots, and of safety equipment, is one of the best safeguards against accidents. To help in quick identification the American Standards Association has developed this color code:

Red identifies fire-protection apparatus, and walls or supports where extinguishers are mounted; flammable liquid containers (except shipping containers) stenciled with a list of the contents; lights at barricades and danger signs; emergency stops on machines; and emergency stop buttons for electrical switches.

Yellow has high visibility, suitable for marking hazards that may result in slipping, falling, and bumping into objects. Solid yellow, or yellow-and-black stripes or checks, attract special attention to top and bottom treads of stairways, low beams and pipes, and crane hooks. Black-and-yellow stripes are also used on mobile equipment, such as tractors and industrial locomotives.

Green in combination with white, such as a green cross on a white background, marks the location of first-aid kits and safety equipment such as stretchers and gas masks.

Black and white, in stripes or checks, are used for housekeeping and traffic markings.

Orange, because of its high attention value, is the basic color for marking dangerous parts of machines or energized equipment. When enclosure doors are open, or when gears, belts, or guards around moving equipment are open or removed, orange on the interior serves as a warning that dangerous parts are exposed.

Blue is for warning signals, such as painted barriers or flags. These should be placed conspicuously at the starting point or power source of machinery.

Purple is the basic color for designating radiation hazards. Yellow should be used with purple for tags, labels, signs, and floor markers.

—*National Safety News*

Wanted—Managers, Pros, and Skilled Workers

ALTHOUGH LOCAL LABOR SHORTAGES eased considerably during 1957, there is still a great need for managers, professional workers, and skilled craftsmen, reports the U. S. Bureau of Employment Security. These three groups accounted for about 70 per cent of the job openings toward the end of last year. At that time, 5,400 professional and managerial jobs, and 4,350 openings for skilled craftsmen, went begging.

Digests of the Month

The "Common Laws" of Discipline

FEW PROBLEMS PUZZLE managers more than plant discipline. When do you clamp down on an errant employee? When do you look the other way? How will your actions affect employee morale and plant production?

Out of thousands of arbitrators' awards handed down over the past 20 years, there has developed a sort of common law of employee discipline. Whether or not you agree with the arbitrators' conclusions, you must play by these rules if you operate under an arbitration clause. Even without an arbitration clause, you'll find them useful guides to the solution of displinary problems.

Here are the seven common laws arbitrators usually use in checking discipline cases:

1. *Make the rule reasonable.*

One company set up this rule: Employees may have 48 minutes a day for personal use—10 minutes for coffee, two 5-minute wash-up periods, and 28 minutes for personal relief.

"That's not a reasonable rule," said the arbitrator. Under the ruling, could an employee *loiter* away his whole 28 minutes? If he loitered away 25 minutes, would he have to take care of his personal requirements in the remaining 3 minutes? "It's not reasonable for a company to set up a system that permits . . . supervisors to spend time rehearsing the details of an employee's washroom habits."

2. *Stay out of private lives.*

The employee's life away from the plant is his own. Don't try to regulate it except in one instance—if what he says or does outside the company injures the company's business or reputation.

When a packing-house employee knifed his wife and mother-in-law, the company fired him. Why? Having him on the payroll would adversely affect the company's workmen's compensation coverage. The insurance company had previously threatened to cancel the coverage if the company retained any wild-eyed employees. The discharge was upheld.

3. *Don't keep rules in your hat.*

Ignorance of rules is a good excuse —if the employer fails to publicize his

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rules clearly to all employees. How? Through handbooks, letters, memos, bulletin-board notices. Word of mouth will do only if, later on, you can prove exactly what you said.

Arbitrators feel strongly about publication of rules. One company fired two workers who did not punch their own time cards. An arbitration board ordered the workers reinstated because, it said, there was no evidence that a rule had been posted telling employees not to punch other people's cards.

No posting, however, is required for obvious infractions. When an enterprising worker at an aircraft plant lent money to fellow employees at interest ranging from 520 per cent to 1040 per cent per year, he was fired. The union, citing his 17-year good record, accused the company of firing him without warning. The company answered that no person, unless his character is defective, needs a rule to know that such a thing is wrong. The arbitrator upheld the discharge.

When you reprimand an employee, tell him: 1) what he did that was wrong; 2) why it was wrong—what rule it violated; and 3) what will happen if he does it again.

Then, quickly, while it's still fresh in your mind, write a memo describing how you handled the situation and what you told the employee. File this with his record. If it's feasible, file the other copy with the union.

4. *Correct—don't punish.*

Your objective is to get the job done well at the lowest possible cost. Termination means rehiring and retraining, not to mention lowered morale. All this spells higher costs. In addition, arbitrators look hard and long before they sustain a discharge.

Remember these principles:

. . . Reserve discharge for the more serious offenses, such as stealing, arson, gambling.

. . . Order discharge in minor cases only when less stringent penalties (reprimand and layoff) have not been effective.

. . . Take into consideration, in assigning a penalty, the employee's record and his service with the company. And don't overlook mitigating circumstances.

5. *Make the punishment uniform.*

For the same or similar offense, the arbitrator expects you to pass out the same or similar punishment.

There are exceptions, however:

A more severe penalty can be imposed on the leaders of a wildcat strike or slowdown than on the followers. Stiffer punishment can be assigned to the instigator of a plant fight than to a man who merely defends his honor.

6. *Don't double up on punishment.*

The principle of no double jeopardy has been carried over to arbitration hearings. When you punish a worker for an illegal act, he has every right to believe that he has had it.

It's all right, though, if you make it clear to the employee and the union that the punishment is an interim penalty, perhaps with a stronger one to follow.

7. *Grant the benefit of the doubt.*

Arbitration is supposed to be informal. But this doesn't mean that all rules are thrown out. Sound rules of evidence (based on the principle of giving the employee the benefit of

the doubt) have been developed by arbitrators. Here are a few:

. . . Confessions of guilt are admissible—but not if obtained through inducements, commitments, or threats.

. . . Discharges will usually not be upheld if they are based on uncorroborated or anonymous accusations by a fellow employee.

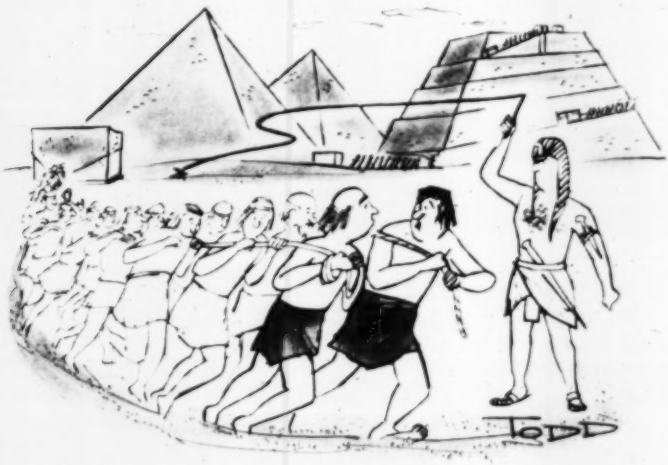
. . . Circumstantial evidence may be enough. It was enough, in one instance, to convict an employee of violating a no-smoking rule when the circumstances were such that only he could have created the smoke in the washroom.

. . . An employee's bad past record, indicating that he is capable of having committed the offense in question, may be introduced. But past acts must be proved.

Arbitrators unanimously give one break to employers: An employee who disagrees with a rule must obey first and argue later. For instance, a company posted a notice that coffee breaks would be cut out. Plenty of advance notice was given. When four employees ignored the rule, the company suspended them for five days, and the arbitrator supported the company. "Obey first, file a grievance later," he said.

There is only one time that an employee can disobey—when he is asked to do a hazardous job or act criminally. And even in these instances, he acts at his own peril—that is, he must be right in judging that his compliance would result in danger or unlawful acts.

• Paul A. King
FACTORY MANAGEMENT AND MAINTENANCE
June, 1958, p. 79:9



"Think there's any truth to this 'hundred-hour workweek' talk?"

Job Descriptions: Some Practical Pointers

ONE OF THE first steps in learning how to get more mileage out of your working hours is to find out exactly what you're doing. That's why a job description for everyone in your department can show the way to improved efficiency and output.

Job descriptions are valuable in many ways. Here are just a few:

Personal efficiency—You can study your own job and its place in the company structure. Then compare what you are doing with what you feel you are capable of doing.

Hiring—You can match skills with clearly defined job requirements.

Training new employees—The new man gets a clear picture of what is expected of him.

Work simplification—Review of job descriptions (including your own) will show how tasks are grouped and distributed. In this way you can combine some functions, and perhaps eliminate others.

Performance ratings—A job description focuses attention on job content, rather than personal characteristics. It leads to clearer and more objective evaluation of a worker's performance.

Promotions and transfers—They can be handled efficiently when the requirements for each job have been specified.

A good way to get your project started is to have each man prepare a rough first draft himself. If a worker has never written a job description before, he can follow an outline or a list of key questions. But remind him that a job description is concerned with his job—duties, responsibilities, and operating relationships—not with his own performance.

After the supervisor reviews the first draft, he and the employee can sit down together and discuss changes.

Here are some points to remember in drafting a job-performance sheet:

Use language simple enough to be understood by an outsider, and state directly what the person does ("sorts requisitions" rather than "the requisitions are then sorted").

Refer to job titles, rather than proper names ("reports to traffic supervisor," not "to Frank Webb").

Avoid vague, ambiguous terms like "handles," "reviews," or "processes." A phrase like "has responsibility for budgets" could refer to a comptroller's job or that of a file clerk. Instead, say "reviews and approves departmental budgets," or "files budgets in main office."

Figure out the amount of supervision necessary: State whether a particular phase of the work is done under specific instructions or is initiated by the worker himself; how closely, if at all, the work is checked at various stages; what decisions are made without reference to the supervisor; and what initiative is exercised in completing assignments or undertaking new ones.

A good job description should provide this information:

1. Title of job

2. Objectives (optional): a broad statement of over-all goals, usually

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used only in descriptions of supervisory or managerial jobs

3. Relationships
   a. reports to—(title)
   b. responsible for work of (titles of subordinates)
4. Duties
   a. regular
   b. periodic
   c. occasional
5. Responsibility (initiative, degree of supervision, judgment)
6. Equipment operated (required speeds, skills involved)
7. Working conditions (if hazardous, unpleasant, difficult, or otherwise of special relevance)

These seven points need not be treated separately, and not all of them will be pertinent to every job description. For example, "equipment operated" would not enter into a job description for a purchasing clerk, but it would be extremely important for a lathe operator.

The condition of work received, the processing involved, and the form in which the completed work is passed on can also be included.

The foreman's own job description is similar, but these additional questions should be answered in detail:

1. Whom do you supervise? List job titles and briefly summarize what each person does. Does the entire job come under your supervision, or do you check only certain parts? Indicate any instruction or training for which you are responsible, and whether or not you have the authority to recommend pay changes, promotions, and other such actions.

2. How much supervision do you receive? Give a few concrete examples of the decisions you make entirely on your own.

3. What would be the effects of errors on your part?

• *Virginia Morley*
PURCHASING
February, 1958, p. 90: 4

The Middle Road to Safety

SELF-CONTROL, and avoiding "extremes," may be the key to accident control. After a study of "high-accident" United States airmen, John J. Conger, of the University of Colorado Medical Center, found that accident-prone people usually show the following tendencies:

—Have little capacity for managing or controlling hostility.

—Are excessively self-centered—or too socially centered (excessively aware of the opinions of other people).

—Show unusual preoccupation with "fantasy satisfactions"—or are extremely bound to the satisfaction of current needs.

—Demonstrate extreme fear that love and support will be lost.

—Are generally unable to tolerate tensions without an immediate outlet for their energies.

How Creative Are You?

WANT TO TEST your imagination? Try the three "partial pictures" at the bottom of this page. What do they represent? (Answers will be found on page 59.)

These sketches are part of the "AC Test of Creative Ability," now used extensively by the AC Spark Plug Division of General Motors, and a number of other companies. All new men in certain categories are given the test, which may influence their placement. Employees with creative potential are immediately recognized, and given the opportunity to develop their creative talents. In several instances, workers relocated on the basis of their test results have shown marked improvement in their performance. The exercises were designed to reveal those qualities which make up over-all creative ability: imagination, flexibility, idea fluency, originality, and problem sensitivity. Here are a few sample questions taken from the AC test:

Let's consider a commonplace item —a bottle. We are all familiar with the conventional uses for a bottle. In the list of uses that follows, circle those to which a bottle could also be applied:

lamp base	*weapon*
door stop	*gift*
container	*tool*
float	*marker*
missile	*ornament*
bookend	*toy*

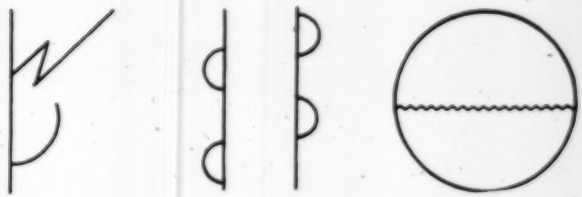
If you have thought hard enough, or if you have been flexible enough, you will have encircled all of the words above. By a stretch of the imagination, a bottle might be used in any one of these ways. Ability to see this is a test of flexibility.

Here is a similar exercise: a list of commonplace items with known, specific uses. Find at least one *unconventional* use for each item:

hammer _____
coin _____
crayon _____
tack _____
pencil _____
cigarette _____

If you have difficulty finding an unconventional use, or in assigning a new function for things that have specific functions in your experience, your creative ability is being re-

(a) (b) (c)



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strained by what psychologists call "functional fixation." Functional fixation is a form of rigidity in thinking, and therefore is in direct opposition to flexibility.

Have you ever said something like, "Why don't they do something about . . . ?" or "Why doesn't someone come out with a gadget that will . . . ?" Every time you do this, you are recognizing a need, or detecting a problem. If you do this often, you have a significant amount of the quality of problem sensitivity. Let us say that you are given a list of appliances and asked to suggest improvements for those that need them. For example:

Refrigerator
Vacuum cleaner
Washing machine
Toaster
Iron
Dryer
Food mixer
Floor polisher

There is no time limit on this exercise. Also, there are no right or wrong answers. If, within 15 minutes, you can think of improvements for all the appliances listed, give yourself a good score for problem sensitivity.

The ability to suggest improvement is another way of detecting needs or of recognizing problems.

Nothing is done so well that it can't be done better. Anyone who wishes to make better use of his creative abilities must acknowledge the fact that everything can be improved.

Problem sensitivity consists of two elements. First is the ability to sense the existence of a problem. Second is *analytical ability*—knowing how to pick out the real problem from a mass of conflicting difficulties.

Here's another exercise, to test your originality. Your company has developed a new pest exterminator called "Rotogon." What slogans can you think of that might help to promote this new product?

A manager's responsibility for originality isn't limited to developing his own capability; he must also see to it that his subordinates develop theirs. A worker will hesitate about being too original in his work, if he feels that his supervisor is not receptive to new ideas. In order to obtain the maximum creative effort from any employee, the manager must create an atmosphere of "psychological safety." The employee has to realize that his original thinking is welcomed, and that nothing he proposes will jeopardize his position or his supervisor's impression of him.

The AC Creativity Program was explained to the top staff first, and then to successive levels of management. In every case, the employee's supervisor tried out the program before him, and knew what to expect. Special times are now set aside for brainstorming sessions, when any idea goes.

Many benefits have been derived from this program, but the most outstanding is the improvement of the general attitude toward ideas and changes.

• *Walter J. Freiss*
TIDE
April 25, 1958, p. 55:3

The Rules of Persuasion

ONE OF THE MARKS of a good manager is the ability to convince other people to do what is best for themselves and the company. But as soon as you set out to persuade someone, you're usually in trouble. The majority of people resist change with the same instinct that prompts them to blink when a hand is swung at their eyes.

Here are some "rules" that can help you overcome this resistance:

Build a backlog of good will. If a complete stranger stops you in the street and attempts to persuade you to do something—vote for his candidate, buy his brand of cigarettes, join his club—your first reaction is likely to be, "Just who *is* this bird, anyway?"

It's normal to want to know about anyone who sets out to influence you. The more favorable his reputation and the friendlier the atmosphere, the stronger his position will be.

Describe the risk and the stakes. You should know, and give, the answers to these questions:

1. What does the individual stand to gain or lose? You're wise to point out the advantages and disadvantages: "Jim, I know that giving up your old job and taking on a new one isn't going to be easy. You'll have to put more effort into the job, and work longer hours.

"Those are the disadvantages. But as I see it, the favorable side is much more important. You're near the top limits of your present job, but the new area is just crying to be opened up. It's an opportunity I feel sure you'll be able to make pay off handsomely."

2. Why did you pick him? Generally, there are flattering reasons that explain your choice:

"I picked you over other possible candidates because of your record. It's not only a matter of production, Jim, but you've proved that you know how to think through a problem."

3. What's your stake in the matter? The man you're trying to convince is likely to realize you've got an ax to grind. Don't conceal it:

"I have a personal interest in your accepting the new job, Jim. Frankly, I'd find it tough to start a new man there. Just as important, I've been trying to sell the boss on our expanding and he finally agreed, with the understanding that we would get an experienced man to accept the assignment. It would make me look plenty good if you handle the job successfully."

Try to spot the beliefs or attitudes that block acceptance. You seldom operate in neutral territory. Generally, you must persuade *away from* as well as *toward* a given view or action.

Dividing resistance into *logical* and *emotional* (or illogical) types is useful, since stated objections may or may not be factually correct.

"I can't afford it," says the housewife to the salesman at the door. But her real reason may have been that the product was too cheap in quality, or the color was wrong.

When you find the going rocky, ask yourself what the reason behind the resistance is.

Sometimes a direct question will

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do the trick: "Now that I've given you the picture for and against, what's your reaction?" But, more often, it's a matter of interpreting behavior.

You've been trying to get an assistant to change a work procedure. "I don't think it's as good as the way I'm doing it now," he tells you. You noticed a pained expression on his face as soon as you started talking. He hasn't had the opportunity for fair comparison. Therefore, you'd probably be correct if you guessed he was exhibiting a normal resistance to change.

Finally, there are the *realities of a situation.* You're trying to persuade a capable secretary to accept a job of greater responsibility. She gives you a lukewarm acceptance, then asks for reassurance that she can have her old job back if she wants it.

She always seemed ambitious, capable, and self-reliant. Why does she hesitate? Look at the proposal from her point of view. Maybe she thinks, "I'm hoping to get married soon. Why get involved in a job with plenty of headaches if I'm not interested in making a career of it?"

To get a person to go along with you, you must provide a big enough push to make it easier for him to move than to stand still. Consider these four basic motivations:

1. Gain. Sometimes it's a matter of money, but very often it isn't. An ambition realized, for example, may mean more than a sizable amount of cold cash: "Hank, taking this young fellow on as an assistant may help you to get that visit to the Coast that you've been trying to work out."

2. Convenience. This factor can generally be spelled out in specifics: "We could cut down the distance from our warehouse to the first point of operation from 525 feet to 270 feet."

3. Pride. We like to look good to ourselves and to those around us. There's a lot of appeal in telling a person that he'll be able to set a record, pull off a "first," or build up his prestige in the eyes of his colleagues.

4. Security. You can emphasize the security of a move without making it sound stodgy or limiting: "Working out a compromise with Brown will give us peace of mind on the whole issue. Then we'll be able to turn our attention elsewhere with renewed energy."

Wherever possible, back up what you say with proof as clearly and concisely as possible.

If your proof is visual, or is in the form of facts and figures, the trouble you take to organize it and give it eye appeal usually pays off.

It helps also to make compliance easy. "All you have to do is sign your name here." Obviously, Mr. Blank is going to have to do considerably more than put his signature on the dotted line. But this easily accomplished act is symbolic of agreement.

Getting a worker to take the first step often leads to success. In some cases, however, your first attempts fail and your patience gives out before you are successful. Does this mean that the cause is lost? Not necessarily. The final guidepoint may help you even in the toughest case:

Add a new element. Whenever you

come up against a stone wall, you may want to consider the addition of a new advantage. You can increase the dollar benefit or add some further gain in position or prestige.

But you're not necessarily limited to boosting the ante. Sometimes a new emphasis, stressing and enlarging a part of the picture you may have slurred over, can make your persuasion irresistible: "Maybe I didn't make this clear, but you'll have complete authority over this project, and it could very easily lead to a promotion."

"But I Can Hold My Liquor"

EXPERIENCED DRINKERS often boast about their capacity for alcohol. And they think they can prove their point—after all, a novice can take one drink and get "looped," while a regular drinker can gulp down three or four without showing any outward effects.

But the medical facts tell a different story. Speed in burning alcohol doesn't increase with practice. After 20 years of regular drinking, a person has no greater alcohol-oxidation capacity than his teetotaling neighbor. Both will absorb alcohol from the intestines with equal speed, both will lose their perception and coordination at the same rate, and both will become unconscious at the same blood level.

The only difference, say scientists from the Yale Center of Alcohol Studies, is on the outside. The novice is often bewildered and even delighted by his new sensations and his free-acting tongue; the experienced drinker knows what to expect and controls the impulses he feels. But there is no real difference in their actual physical abilities.

A group of sober-acting, self-possessed people who had been given a number of drinks made poor scores in a series of tests at the Yale Center; they were deeply under the influence of alcohol, even though they didn't act it. But a group of schoolteachers who became riotous and foolish on much less liquor took the same tests, and, despite their apparent giddiness, they showed up much better.

The moral is that habitual use of liquor, whether moderate or heavy, does not change the body's fundamental response to alcohol. It's practically suicide to drive a car, operate a machine, or do any work involving critical decisions after drinking more than a moderate amount of liquor, no matter how sober and self-possessed you feel.

—MORTON M. HUNT, in *Hangover Cures and Other Myths* (Birk & Co., Inc., New York 22, N. Y.)

Automation—Most Workers Like It

WHAT DO WORKERS think of automation, once they've had a chance to work with it? To find the answer, Michigan State University's Labor and Industrial Relations Center sent Professor W. A. Faunce into one of the most highly automated engine plants in Detroit.

Some 125 workers were interviewed at random. All were experienced in both automated and nonautomated production lines. They averaged nearly 20 years' seniority. Surprisingly enough, 72 per cent indicated that they preferred their present automated jobs to their old jobs, in which they used conventional machines.

Of the reasons given for preferring their present jobs, 68 per cent referred to the fact that the automated job involved less handling of materials and less labor.

The workers considered some types of automated jobs more interesting because of the greater complexity of the transfer machinery. They felt that the new jobs were "more challenging"; there was a lot to know and learn about the operation of the machines.

Acquiring new operating skills gave the workers a feeling of greater personal job security.

Most of the reasons listed for preferring nonautomated jobs were stated in negative terms—features the men disliked in automated jobs. Most frequently mentioned, though still amounting to only 17 per cent of the total reasons given, was the loss of the production-quota system used for nonautomated processes. Because of the interdependence of the machines, the worker could not get ahead of schedule and take a break if he wanted to.

Others preferred nonautomated jobs because they could not identify the work of the transfer machine as their own work. Operators no longer had much control over the machine or the work pace; also, machining skills previously acquired were no longer needed.

Here is a typical reaction:

"I don't like the feeling of not being responsible for your work—the feeling that you're turning out more work but knowing it's not yours really, and not as good as you could make it if you had control of the machine as you did before."

In some cases, dissatisfaction comes from increased feelings of tension or anxiety. "This," Professor Faunce says, "results from increased speed of production, constant attention required, cost of mistakes, and frequency of breakdowns of automated equipment." He believes that tension must be regarded as an important source of dissatisfaction on automated jobs.

One worker was understandably concerned about the effects of tension: "[Automation is] just different all the way through. You've got to be

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aware all the time and push the right button. If you push the wrong one it can be expensive, and very dangerous. I pushed a wrong button and stuff flew all over. I was lucky, but it cost the company $13,000 to fix the machine."

Automation also brings important changes in the social life of workers—changes which are often a source of job dissatisfaction.

In old plants, work stations are close enough to permit conversation at least once or twice an hour. Workers told the investigator that the old job required less attention. By working ahead of the production schedule, it was possible to turn off the machine and take a break—which further facilitated conversation.

Less than half the workers said they were able to talk very often to the men around them on the new job, compared with 80 per cent who said they could on the old job. There were also fewer people involved in group contacts—less than four people to a group in the automated plant, compared with groups of five to six previously.

Professor Faunce concludes that many workers on automated production lines "are virtually isolated socially because of the distance between work stations, the necessity of close attention to the job, and the noise of the machines."

Fewer on-the-job contacts also reduced the number of off-the-job contacts among workers.

Frequency of contact with others apparently plays an important part in determining job satisfaction. Of the majority who *are* satisfied with their present jobs, over 50 per cent reported frequent social interaction.

Automation has also produced some changes in relations between workers and supervisors. There are more foremen and supervisors in the automated plant, and workers have more frequent contact with them. The added supervision is not entirely welcome.

Here is a summary of the mixed feelings about jobs on automated lines:

1. The good points

Involves less material handling, less labor.

Complicated machines make the job more interesting.

New operating skills acquired offer more job security.

2. The bad points

Difficult to identify oneself with the work.

Machining skills are no longer needed.

No control over work pace or breaks.

Mistakes are costly; constant alertness is required.

Less contact with fellow workers.

More supervision.

These lists can be misleading, however, unless it is remembered that more than 7 out of 10 of the workers with experience on both automated and nonautomated lines actually prefer their jobs under automation. Although the dissenters tend to speak up loudly, they are definitely in the minority.

• *H. R. Neal*
THE IRON AGE
May 15, 1958, p. 49: 2

Good Times Ahead

THE SURGING GROWTH of America during the last dozen years has given rise to vastly expanded needs. Meeting these needs offers greater opportunities than ever to all groups in our society.

Dramatic changes have affected America's population, work and earnings, food and shelter, education, and leisure. Here are the facts on some of these changes:

Population: Our population has been growing at an amazing rate. Total of births in 1957 was the largest on record—4,302,000. By 1960, our population will be close to 180 million. In ten years, it should shoot past 200 million.

Work and earnings: Millions more Americans are working than before the war, and they are saving more, borrowing more, and buying more life insurance. Much of the work today is done by machines and power, but, despite temporary downswings, the trend of employment and earnings has been spectacularly upward. Total employment was 15 million higher in February, 1958, than the 1939 average. There will be 22 million more jobs in 1975 than there are today. Average income per household about doubled between 1940 and 1950. Individual savings rose from $68.5 billion in 1940 to $333.7 billion in 1956.

Food: Americans are eating more and better food. Since the end of the war, food has become an $80 billion market. This rise in food consumption includes 7.5 per cent more milk and cream per person; 13 per cent more eggs; 18 per cent more meat, fish, and poultry.

Education, travel, and leisure: More young people are going to high school and college (91 per cent more high-school graduates than in 1940, more than twice as many students in colleges).

Along with these vast material and social changes have come new miracles, the result of scientific research in many fields, from medicine to space travel. Atomic energy, electronics, biochemistry, jet propulsion, automation, antibiotics—all industries that didn't exist 20 years ago—have introduced new factors and new products into our daily lives, and offer limitless possibilities for further change.

This rapid growth has produced tremendous, compelling needs in many fields: more homes and highways, schools and hospitals, and the modernization of cities, factories, and equipment.

Homes: The great majority of our dwellings need rebuilding or remodeling. More than 50 per cent of our homes are now over 20 years old; 40 per cent are now over 30 years old.

Highways: More and better highways are needed. Today's highways are carrying twice as many vehicles as in 1940. The resulting congestion has aroused great pressures for new equipment.

Schools: With many more children under five years old than in 1940, our school facilities should be almost doubled in the next few years. The number of qualified young men and women seeking a college education will double by 1967, and an expenditure of an additional one-half billion dollars during that period is the rock-bot-

tom estimate of what will have to be spent for more teachers, classrooms, and laboratories.

Industry and equipment: New industrial needs and developments have been creating a continous need for plant modernization and replacement of obsolete, outmoded, or inadequate equipment.

Electric energy: With expanded growth of the country, the output of electrical energy should increase by 250 per cent by 1975, and our natural resources must be ready to support such a rise.

To meet just the needs mentioned, there is an opportunity to supply more than $500 billion worth of goods and services at today's prices—a huge potential for work, production, and investment.

Vast and significant changes have been taking place in America during the past dozen years; four million more babies in the United States each year, more and bigger families, longer life, more jobs, higher earnings and savings, millions more spent on food and housing, more machinery and power, better education, more leisure, travel, entertainment, and heightened cultural and spiritual interests.

These sweeping changes, these tremendous needs, add up to greater opportunities for practically everybody.

• STET
(The Champion Paper and Fibre Co.)
May, 1958, p. 1:3

The Physically Handicapped Pay Their Way

THE PAST DECADE has seen great progress toward removing the barriers to employment for the nation's physically handicapped, largely through the work of the President's Committee on Employment of the Physically Handicapped, governors' committees, and cooperating organizations and individuals. Yet the ranks of the physically impaired still contain a reservoir of able and dependable workers. The failure of managers to utilize their skills and abilities constitutes a tremendous waste of the country's most valuable resource—its skilled manpower.

The U.S. Civil Service Commission, after comparing performance records of handicapped workers with those of able-bodied employees doing the same work, has proved that handicapped workers perform as well as or better than able-bodied workers, in both quality and quantity of work produced; that they have a much lower rate of turnover and fewer accidents causing time lost from the job; and that their attendance records compare favorably with those of the nonhandicapped.

Last year a policy for employment of the handicapped was issued by direction of the President. The statement emphasizes that each government department and agency should observe the following principles:

1. Physical standards will be fair, reasonable, and adapted to the realistic requirements of jobs.

2. An opportunity will be provided

for a fair appraisal of pertinent qualifications of physically handicapped applicants and employees.

3. Physical abilities of handicapped people being considered for job placement will be appraised in relation to the essential physical requirements of the job.

4. Employees who acquire disabilities as the result of work injuries, off-the-job accidents, or diseases will be given full opportunity in re-employment or in transfer to more suitable jobs.

Supervisors in private industry, too, can play a key role in the employment of the handicapped. Here are some tips:

1. Satisfy yourself about the capabilities of handicapped workers. Find out about the amazing success seriously disabled people have achieved in a wide variety of jobs. Chances are you will find outstanding success stories in your own industry and community.

2. Take a close look at the jobs you supervise—do they really require 100 per cent physical perfection? Could they be handled satisfactorily by people with certain kinds of disabilities?

3. If handicapped people are referred to you for employment in your unit, give them full and fair consideration, along with other qualified candidates. Consider their abilities, not their disabilities; take account of the ways in which they have compensated for their disabilities through rehabilitation, training, or unusual development of their remaining assets.

4. Remember that a *properly placed* handicapped worker is not handicapped on the job. He can help you to get your job done.

• PERSONNEL INFORMATION BULLETIN
(Veterans Administration)
January, 1958, p. 6:3

"Got a quarter?"

Hear! Hear!

STUDIES AT THE University of Minnesota show that the average person, immediately after listening to someone talk, remembers only about 50 per cent of what he has heard—no matter how carefully *he thought* he listened. A couple of months later, he is doing well if he remembers 25 per cent of what was said.

Most people do not realize how much time they spend just using their ears. A survey made by Paul T. Rankin, supervising director of research and adjustment for the Detroit Public Schools, showed that the average adult spends 45 per cent of his communicating time listening. The remainder is divided up among reading, writing, and speaking.

On the job, the foreman listens to the man at the bench, the superintendent listens to the foreman, and so on up the line. Everything would be fine—except for the bad listeners along the way.

Poor listeners can cause costly errors; they may stop information entirely, or they may twist it, making it useless. Managers who have had bad experiences with listening may end up avoiding oral information, and find themselves buried in a snowstorm of memos. Poor listening, then, can force people away from the spoken word. And the spoken word is usually a lot faster and more economical than the written message.

Once people are aware of the importance of good listening, they will show some improvement almost automatically. Telephone operators, for instance, are usually good listeners—not necessarily because of any special training, but because they know how important it is to listen well.

But listening habits can also be consciously improved. Let's consider some of the more technical aspects.

First, what do you listen for? A common answer is: "I listen for the facts." Yet, though the intentions are good, this doesn't always work. Here's what happens:

Your boss is giving you instructions made up of facts from A to Z. He begins to talk. You hear Fact A and think, "I've got to remember it." So you begin a memory exercise, repeating, "Fact A, Fact A, Fact A . . ." Meanwhile, the boss is relating Fact B. Now you have two facts to remember, and you're so busy doing it that you miss Fact C completely. And so it goes up to Fact Z. You catch a few, garble others, and completely miss the rest.

When a person talks to you, he is usually trying to put across an idea or two. He uses detailed facts to support the ideas, like building blocks. A good listener naturally hears the details, but he concentrates on finding what they all add up to. He weighs one against the other, trying to recognize their relationships. In doing this, he looks for the speaker's *main ideas*. Then he can get the most meaning from what he hears.

Regardless of what you listen for, concentration is a problem—and for a special reason. The average person speaks at a speed of about 125 words per minute. Most people think at about four times that rate (if thought

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is measured in words), and it's impossible to slow down. What do they do with the spare time?

The bad listener uses it to take mental excursions away from the spoken line of thought. He starts following the speaker, but then strays away to his own concerns. Eventually his mind tarries too long upon some enticing, but irrelevant, subject. Then, when he returns to the speaker, the would-be listener finds he's lost track of what is being said. Now it's harder to follow the speaker and easier to take more side excursions. Finally, the listener gives up, allowing his mind to remain in another world.

The good listener should apply all his thinking time to the spoken words. He should:

- Try to anticipate what a person is going to talk about. On the basis of what the speaker has already said, the listener should ask himself: "What's he trying to get at? What point is he going to make?"
- Mentally summarize what has been said. What points has the speaker made already, if any?
- Weigh the speaker's evidence by mentally questioning it. If he gives facts, illustrative stories, and statistics, the listener can ask himself: "Are they accurate? Do they come from an unprejudiced source? Am I getting the full picture or is he telling me only what will prove his point?"
- Listen "between the lines." Words aren't everything. The changing tones and volume of the speaker's voice may have meaning. So may his facial expressions, and his gestures.

With these principles in mind, a listener is on the way to improvement—but he won't arrive unless he works hard, and that takes practice.

Anyone who wishes to improve his listening abilities can practice by listening to discussions on radio and TV, speeches, lectures, and recordings.

In the past, almost all the responsibility for effective listening was placed on the speaker. The listener said, "If you can't catch my attention and make me understand, it's your fault." But, since the listener is on the receiving end, at least half—perhaps more—of the communication responsibility should fall to him.

• Ralph G. Nichols, with Leonard A. Stevens
THINK
June, 1958, p. 11:3

Nationwide Placement for Managers

IN AN EFFORT to cut down the current shortage of managers and professional workers, a new federal placement service has been initiated by the U. S. Bureau of Employment Security and state employment-security agencies across the country. Employment offices in 78 cities are being utilized to speed up the matching of trained men and available jobs. Each of these offices will maintain a list of job openings in professional and managerial occupations throughout the nation.

How to Ruin Your Vacation

THIS IS THE HAPPY season of chaos and mental instability, the glorious time of year when millions of Americans turn their backs on office and factory and set off in search of new techniques for shattering their nervous systems. It's vacation time!

A few of us are endowed with a natural talent for fouling up our vacations and need no professional guidance. However, the following list of suggestions has been prepared for those who have never known the deep satisfaction of returning from their vacations full of smoldering anger, unutterable weariness, and chigger bites. This list can be pasted inside your raincoat where it will serve as a daily reminder:

• Choose your vacation as the ideal time to quit smoking. This will bring happiness to yourself and all those around you.

• Try to get a room or cottage next to a family whose youngsters are members of the Elvis Presley Fan Club.

• Exercise! Live hard! Ride horseback, play badminton, get up three-legged races, play tennis, put the shot, hurl the discus, vault the pole, swim the channel—anything at all to get the muscles as supple as barrel staves.

• Never make hotel or motor-court reservations for your return trip—this creates a delightful kind of suspense and leads to your driving all night, which is romantic and adventurous.

• If you are one of those people who believe themselves immune to poison ivy, locate a patch of the stuff and prove your point by getting down and wallowing in it. You'll be the talk of the whole resort—and so will your blisters.

• If you come from New York City, advise everyone within earshot that New York City is the only decent place to live in the entire country; if you are vacationing in New York City, advise everyone you wouldn't live there if they gave you the toll concession at the Holland Tunnel. In other words, always knock the state or city in which you're vacationing.

• If your wife (or her mother) dares you to swim out a mile and a half beyond the float, be a man! Accept the challenge! The tide will probably wash you ashore within ten days.

• *H. Allen Smith*
WEEKDAY
Vol. 4, no. 6, p. 13

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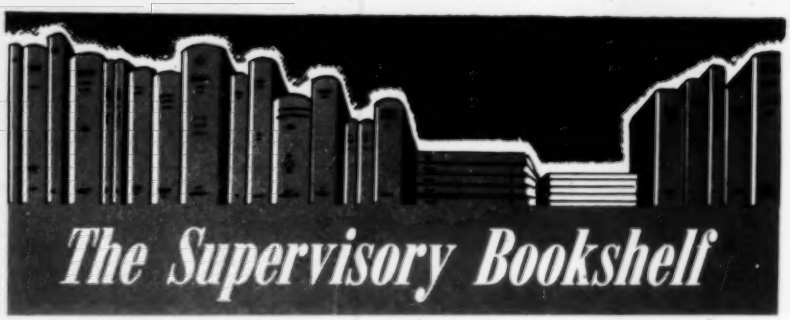
Answers to "Partial Pictures," page 47:

(a) A soldier and his dog entering a doorway.

(b) A cat climbing up the far side of a telephone pole.

(c) The ocean, seen through a porthole.



Book Notes

(Please order books directly from publishers.)

ELEMENTS OF SUPERVISION. By William R. Spriegel, Edward Schulz, and William B. Spriegel. John Wiley & Sons, Inc., New York, 1957. 349 pages. $6.00. This rewritten and updated version of a supervisory manual originally published in 1942 contains much new material, including chapters on mental health, interviewing, motion and time study, and material control.

NEW UNDERSTANDINGS OF LEADERSHIP: A Survey and Application of Research. By Murray G. Ross and Charles E. Hendry. Association Press, New York, 1957. 158 pages. $3.50. This summary of more than a hundred different studies on the nature and meaning of leadership is divided into three sections: theory, research findings, and implications of the findings. The authors have attempted to translate philosophical and scientific concepts into practical ideas that can be used by the man who wants to develop the qualities of leadership either in himself or in others.

THE TECHNIQUES OF DELEGATING: How to Get Things Done Through Others. By Donald A. Laird and Eleanor C. Laird. McGraw-Hill Book Company, Inc., New York, 1957. 195 pages. $3.95. The Lairds present a step-by-step guide, from "before" (determining the need for delegation) to "after" (checking the efficiency of subordinates with delegated powers). Along the way, they discuss such aspects of the problem as what not to delegate, what to delegate in order to develop employees' skills, and the psychological and sociological factors in delegating.

THE EFFICIENT EXECUTIVE. By Auren Uris. McGraw-Hill Book Company, Inc., New York, 1957. 309 pages. $4.95. Although intended primarily for executives, this simply written book contains valuable hints for managers on all levels. The author divides administrative functions into three parts—organization-dictated activities, job-dictated activities, and self-dictated activities—and suggests ways to "budget" the workday. A chapter has been digested in this issue of SUPERVISORY MANAGEMENT (page 49).

HUMAN RELATIONS IN BUSINESS. By Keith Davis. McGraw-Hill Book Company, Inc., New York, 1957. 557 pages. $6.50. The author defines human relations as "the integration of people into a work situation in a way that motivates them to work together productively, cooperatively, and with economic, psychological, and social satisfaction." In examining ways to build better human relations, he includes chapters on such topics as effective supervision, role playing, communicating with employees, the labor union, employee counseling, and the appraisal of morale. A valuable feature is a section of case histories, designed to illustrate typical human-relations problems in business and industry.

SUGGESTIONS FOR CONTROL OF TURNOVER AND ABSENTEEISM. Compiled by the Bureau of Employment Security, United States Employment Service. Superintendent of Documents, Government Printing Office, Washington 25, D. C., 1957. 40 pages. 30 cents. This revised edition of a government study originally published in 1951 emphasizes three factors: adequate records to find out the real reasons for turnover and absenteeism; careful evaluation of these records to get at the facts; and remedial measures to relieve or eliminate the causes.

SOME APPLICATIONS OF BEHAVIOURAL RESEARCH. Edited by Renis Likert and Samuel P. Hayes, Jr. The United Nations Educational, Scientific and Cultural Organization, New York, 1957. 333 pages. $3.25. Based chiefly on seminar reports, this collection surveys recent research into human behavior. Of particular interest to managers is the chapter on "Administrative Leadership and Organizational Effectiveness," which stresses three principles: Employees are likely to be more productive under general supervision than under close supervision; employee-centered supervision is likely to result in higher productivity than is production-centered supervision; performance depends partly on the degree to which the employee becomes a member of a work group characterized by group pride, cohesion, and solidarity.

MATERIALS HANDLING EQUIPMENT. By D. Oliphant Hayes. Chilton Company, Philadelphia, 1957. 636 pages. $17.50. A down-to-earth, nuts-and-bolts treatment of the various kinds of materials-handling equipment used in industry today. There are sections on transporting, elevating, conveying, self-loading, and bulk-handling tools, as well as on accessory equipment. More than 2,200 line drawings, plus a number of charts and graphs showing specifications and applications, are included.

WORK SIMPLIFICATION. By Gerald Nadler. McGraw-Hill Book Company, Inc., New York, 1957. 292 pages. $6.50. Every manager can and should use some form of work simplification, says the author. He presents a how-to-do-it approach for those who want to teach or to learn basic work-saving techniques.

THE WORKER VIEWS HIS UNION. By Joel Seidman, Jack London, Bernard Karsh, and Daisy L. Tagliacozzo. The University of Chicago Press, Chicago, 1958. 300 pages. $5.75. Based on a ten-year study by the University of Chicago's Industrial Relations Center, this book presents an analysis of the findings from interviews with union members and leaders in six Midwestern locals. Coal miners, plumbers, steelworkers, metalworkers, knitting-mill employees, and telephone workers were questioned. Discussing the influence of management on the attitudes of union members, the authors say: "Membership loyalty . . . is likely to vary with the contribution made by the union to the members' welfare; but this will depend to a great extent on conditions that are initiated by management."

ACCOUNTING FOR NON-ACCOUNTANTS. By John N. Myer. New York University Press, New York, 1957. 235 pages. $5.00. A simple explanation of the factors involved in keeping financial records. The author, coordinator of the accounting program at N.Y.U.'s Management Institute, concentrates on developing an *understanding* of accounting language and techniques, rather than showing the reader how to become an accountant.

READ FASTER—AND GET MORE FROM YOUR READING. By Nila Banton Smith. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1958. 393 pages. $5.95. A complete course in reading improvement, with many practical exercises, by the director of New York University's Reading Institute. A large portion of the book appeared in SUPERVISORY MANAGEMENT (September, 1957, through April, 1958) under the title *You Can Read Better and Faster.*

YOUR JOB AND YOUR MONEY. By the editors of *Changing Times*. The Kiplinger Washington Agency, Washington, D. C., 1957. 96 pages. 49 cents (or free as premium on magazine subscription). A selection of articles, dealing with various aspects of personal and professional advancement, which have appeared in *Changing Times*, The Kiplinger Magazine.

MAKE YOUR INCOME COUNT. By Donald I. Rogers. Henry Holt and Company, New York, 1958. 216 pages. $3.95. The author, who is business and financial editor of *The New York Herald Tribune*, presents a basic, sensible, readable guide to saving and investing money. Included are sections on buying insurance, when and how to buy a house, ways to beat inflation, how to choose mutual funds, opening a brokerage account, the cheapest way to buy a car, and planning for retirement. The chapter entitled *Why You Need a Will* is included in this issue of SUPERVISORY MANAGEMENT (page 36).

"That 63¢ is the first dollar I ever earned."

Is the Scientist Really a Square?

THE POPULAR IMAGE of the scientist is not a flattering one. When students in 120 high schools were asked to describe a scientist, they came up with this composite picture: "The scientist . . . spends his days indoors, sitting in a laboratory, pouring things from one test tube into another. . . . He neglects his family; has no social life, no other intellectual interest, no hobbies or relaxations."

But this image has been shattered by a survey of more than 1,000 Du Pont research men.

The survey shows that the scientist is, on the contrary, a family man who is interested in religious, social, and civic affairs, as well as sports and hobbies ranging from gardening to bridge.

More than half of the scientists take an active part in church affairs, compared with the national average of about one in four.

Eighty-eight per cent of the men surveyed are married, compared with 85 per cent of the general population. The average number of children per family is slightly more than two—again higher than the national average.

Seventy per cent of the researchers engage actively in one or more of 42 different sports. Golf is most popular, with bowling second. Then comes tennis, and a whole range of others—fishing, softball, swimming, hiking, hunting, basketball, sailing, and many more.

After work hours, they also spend time with music, sports cars, telescope building, writing, and chess, as well as such uncommon activities as cooking, bird watching, and archeological fieldwork.

Scientists, in short, are not necessarily mental giants, and they're not squares. They're usually ordinary men with extraordinary ability.

THE BODY travels more easily than the mind, and until we have limbered up our imagination we continue to think as though we had stayed home. We have not really budged a step until we take up residence in someone else's point of view.

—JOHN ERSKINE

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- The Why and How of Training Understudies
- Office Layout: There's Room for Improvement
- How to Write Instructions
- Seven Myths About the Older Worker
- Communication: The Dangers of Assuming Too Much

February, 1957

- . . . "But Why Wasn't I Told?"
- The Performance Interview: How to Make it More Specific
- Living with your Union Contract
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